

## Course Description Form

|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                     |                                                                                                                                                                                                                                                                                                                                                                                      |
| Math1                                                               |                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. Course Code:                                                     |                                                                                                                                                                                                                                                                                                                                                                                      |
| ITM 108                                                             |                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. Semester / Year:                                                 |                                                                                                                                                                                                                                                                                                                                                                                      |
| first Semester –2026                                                |                                                                                                                                                                                                                                                                                                                                                                                      |
| Description Preparation Date:                                       |                                                                                                                                                                                                                                                                                                                                                                                      |
| 1/9/2025                                                            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. Available Attendance Forms:                                      |                                                                                                                                                                                                                                                                                                                                                                                      |
| In-person                                                           |                                                                                                                                                                                                                                                                                                                                                                                      |
| 6. Number of Credit Hours (Total) / Number of Units (Total)         |                                                                                                                                                                                                                                                                                                                                                                                      |
| 105- hours                                                          |                                                                                                                                                                                                                                                                                                                                                                                      |
| 7. Course administrator's name (mention all, if more than one name) |                                                                                                                                                                                                                                                                                                                                                                                      |
| Name: Dr Ahmed sabeeh yousif<br>Email:ahmedsabeeh123@ntu.edu.iq     |                                                                                                                                                                                                                                                                                                                                                                                      |
| 8. Course Objectives                                                |                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Course Objectives</b>                                            | 1.Demonstrate proficiency in fundamental mathematical operations, including algebra, calculus, and trigonometry.<br>2.Solve mathematical problems using appropriate techniques and methods.<br>Mathematical Reasoning:<br>3.Apply logical reasoning and critical thinking to analyze and solve mathematical problems.<br>4.Construct and evaluate mathematical arguments and proofs. |
| 9. Teaching and Learning Strategies                                 |                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Strategy</b>                                                     |                                                                                                                                                                                                                                                                                                                                                                                      |

#### A. Cognitive Objectives

- Understanding and Analyzing Systems: The student will be able to understand the basic components of math and identify their vital role in supporting the information management. This includes the ability to analyze existing systems, identify their strengths and weaknesses, and suggest necessary improvements to increase efficiency and effectiveness.
- Applying Technological Concepts: The student will acquire the ability to link the theoretical concepts of SE to contemporary technological applications. This includes an understanding of modern technologies such as cloud computing and Big Data Analytics, and how they can be employed to achieve organizational strategic objectives.

#### B. Course Skill Objectives

- Problem-Solving Skills Using math: The student will develop the ability to identify problems that can be solved or mitigated using system engineering, and to propose innovative technology-based solutions, with a focus on operational efficiency and improved decision-making.
- Systems Analysis and Design Skills: The student will acquire the ability to analyze different methods

#### Teaching and Learning Methods

- Direct instruction (lectures) using educational technology tools
- Classroom discussion and interaction through assignments
- Learning through practical application of materials requiring department laboratories
- Project-Based Learning Strategy
- Google classroom for blended learning

#### Assessment Methods

- \*Periodic Tests
- \*Surprise Tests
- \*Classroom Interaction and Participation
- \*Research Assignments and Reports
- \*Practical and Applied Tests

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>C- Affective and Value-Based Objectives</p> <p>C1- Strengthening the spirit of belonging to a team within the institution and the desire to provide the best</p> <p>C2- Strengthening the desire to compete to raise the educational level</p> <p>C3- Strengthening the sense of belonging to the specialty and developing the desire to work in information institutions</p> <p>Teaching and Learning Methods</p> <p>1. Periodic field visits to administrative and technical institutions</p> <p>2. Experience, actual practice, and interaction with staff through practical application (summer training) conducted by the student in close contact with beneficiaries</p> <p>3. Psychological Motivation and emotionally through open and direct discussions with students.</p> <p>D - General and transferable skills (other skills related to employability and personal development).</p> <p>D1 - Teaching students research and report writing skills.</p> <p>D2 - Teaching students how to connect theoretical knowledge with practical application that they will experience at work.</p> <p>D3 - Teaching students how to access and analyze information sources, and how to derive and document a summary of the information obtained through objective analysis of these sources.</p> <p>D4 - Teaching students how to design databases and websites and implement programs to serve various scientific fields.</p> |
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#### 10. Course Structure

| Week | Hours | Required Learning Outcomes | Unit or subject name  | Learning method         | Evaluation method             |
|------|-------|----------------------------|-----------------------|-------------------------|-------------------------------|
| 1    | 4     | Introduce                  | Introduction to math. | Lectures                | Interaction and participation |
| 2    | 4     | demonstrate                | Relation and function | Lectures and Discussion | test                          |

|    |   |                                     |                                              |                                                 |                                                         |
|----|---|-------------------------------------|----------------------------------------------|-------------------------------------------------|---------------------------------------------------------|
| 3  | 4 | Knowledge and Practical Application | limits                                       | Lectures and Discussion                         | Interaction                                             |
| 4  | 4 | demonstrate                         | Rules for Differentiation                    | Lectures and Practical Application              | Interact and Participate, and Surprise Quiz             |
| 5  | 4 | demonstrate                         | Chain rule                                   | Lectures and Discussion                         | Interaction, Participation, and Quarterly Quiz          |
| 6  | 4 | demonstrate                         | Trigonometric functions                      | Lectures and Discussion                         | Interaction, Participation, and Report                  |
| 7  | 4 | demonstrate                         | Inverse Trigonometric function and Logarithm | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments             |
| 8  | 4 | ppt                                 | assignments                                  | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments             |
| 9  | 4 | demonstrate                         | Increasing and decreasing functions          | Lectures, Discussion, and Practical Application | Presenting and Explaining Report Through Presentation   |
| 10 | 4 | demonstrate                         | Matrix                                       | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments             |
| 11 | 4 | demonstrate                         | Operations of matrix                         | Lectures, Discussion, and Practical Application | Daily Quiz                                              |
| 12 | 4 | demonstrate                         | Integral                                     | Lectures, Discussion, and Practical Application | Interaction and Participation                           |
| 13 | 4 | Paper test                          | tests                                        | Lectures, Discussion, and Practical Application | Reports                                                 |
| 14 | 4 | demonstrate                         | Review and discuss project                   | Lectures, Discussion, and Practical Application | Presenting and explaining report through a presentation |
| 15 | 4 | review                              | review                                       | Lectures, Discussion, and Practical Application | Interaction and participation                           |



## 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

## 12. Learning and Teaching Resources

Required textbooks (curricular books, if any)

Main references (sources)

"Linear Algebra and Its Applications" by  
David C. Lay, Steven R. Lay, and Judi J.  
McDonald

Recommended books and references (scientific  
journals, reports...)

Electronic References, Websites

Websites

## Course Description Form

|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| IT Essential                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 2. Course Code:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| ITM112                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 3. Semester / Year:                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Fall Semester –2026                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Description Preparation Date:                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 1/9/2025                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 5. Available Attendance Forms:                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| In-person                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 6. Number of Credit Hours (Total) / Number of Units (Total)         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 60 hours                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 7. Course administrator's name (mention all, if more than one name) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Name: ahmed samir<br>Email:ahmed.samir @ntu.edu.iq                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 8. Course Objectives                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Course Objectives</b>                                            | <ul style="list-style-type: none"> <li>• <b>Understand Core IT Concepts:</b> <ul style="list-style-type: none"> <li>• Introduce fundamental concepts of hardware, software, data, and digital systems.</li> </ul> </li> <li>• <b>Develop Practical IT Skills:</b> <ul style="list-style-type: none"> <li>• Enable students to use productivity software (e.g., Word, Excel, PowerPoint) and basic operating systems effectively.</li> </ul> </li> <li>• <b>Use Internet and Online Services Safely:</b> <ul style="list-style-type: none"> <li>• Equip students with skills to browse, communicate, and research information online securely and ethically.</li> </ul> </li> <li>• <b>Enhance Problem-Solving with Technology:</b></li> </ul> |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"> <li>• Teach students to apply IT tools to solve real-world problems in academic and professional contexts.</li> <li>• <b>Understand Data and Information Management:</b> <ul style="list-style-type: none"> <li>• Provide basic understanding of data organization, storage, and simple database concepts.</li> </ul> </li> <li>• <b>Promote Cybersecurity Awareness:</b> <ul style="list-style-type: none"> <li>• Develop awareness of threats, safe practices, and ethical issues in digital environments.</li> </ul> </li> <li>• <b>Explore Emerging IT Trends:</b> <ul style="list-style-type: none"> <li>• Introduce modern trends such as cloud computing, artificial intelligence, and IoT.</li> </ul> </li> <li>• <b>Foster Digital Citizenship and Ethics:</b> <ul style="list-style-type: none"> <li>• Encourage responsible and legal use of technology, including respecting digital rights and intellectual property.</li> </ul> </li> </ul> |
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## 9. Teaching and Learning Strategies

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strategy</b> | <p><b>Understand Core Concepts and Components of Information Technology</b></p> <p><b>Objective:</b><br/>To provide students with foundational knowledge of IT systems including hardware, software, data processing, and digital communication.</p> <p><b>Details:</b></p> <ul style="list-style-type: none"> <li>• Define key IT terms: data, information, hardware, software, network.</li> <li>• Identify types of computers and their components (CPU, RAM, storage devices).</li> <li>• Understand the role of operating systems and application software.</li> <li>• Explain how data is represented, stored, and transmitted in digital form.</li> </ul> |
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## **2. Develop Proficiency in Using Productivity Software Tools**

### **Objective:**

To equip students with hands-on skills in using widely-used software tools for academic and business productivity.

### **Details:**

- Create, format, and manage documents using word processors (e.g., MS Word or Google Docs).
  - Perform calculations, create charts, and analyze data using spreadsheets (e.g., Excel).
  - Design and deliver presentations using tools like PowerPoint or Google Slides.
  - Apply formatting, file management, printing, and collaboration features in these applications.
- 

## **3. Use Internet and Web Services Effectively and Securely**

### **Objective:**

To enable students to navigate the web for communication, research, and information sharing while following safe and ethical practices.

### **Details:**

- Use web browsers efficiently for academic and personal research.
  - Understand how search engines work and apply search strategies.
  - Use email and cloud-based communication tools.
  - Recognize safe browsing practices, identify phishing attempts, and avoid malware threats.
- 

## **4. Understand the Role of IT in Society and Everyday Life**

### **Objective:**

To explore how IT transforms industries, education, communication, and daily activities.

### **Details:**

- Discuss applications of IT in healthcare, business, government, and education.
- Examine the digital divide and accessibility issues.
- Understand IT's impact on communication, collaboration, and decision-making.

- Analyze case studies showing real-world uses of IT.
- 

## **5. Apply IT Tools to Solve Problems and Support Decision-Making**

### **Objective:**

To develop critical thinking and problem-solving skills using IT systems and applications.

### **Details:**

- Use software tools to collect, organize, and interpret information.
  - Solve real-life scenarios using basic IT tools (e.g., budgeting in Excel).
  - Understand algorithmic thinking and simple logic behind programming or automation.
  - Utilize basic troubleshooting techniques for software/hardware issues.
- 

## **6. Demonstrate Awareness of Cybersecurity Principles**

### **Objective:**

To introduce students to the importance of data security and safe online behavior.

### **Details:**

- Identify common threats (e.g., viruses, phishing, social engineering).
  - Understand the importance of passwords, firewalls, and antivirus software.
  - Learn safe data sharing and cloud storage practices.
  - Discuss privacy concerns and how to manage digital identities.
- 

## **7. Explore Emerging Technologies and Trends in IT**

### **Objective:**

To provide students with insights into current and future directions in the IT field.

### **Details:**

- Introduction to cloud computing, AI, IoT, blockchain, and big data.
  - Understand how these technologies are reshaping industries.
  - Discuss ethical and legal implications of emerging technologies.
  - Encourage curiosity and ongoing learning in the field of IT.
-

## 8. Promote Ethical and Responsible Use of Technology

### Objective:

To instill values of digital citizenship and encourage legal and ethical behavior when using technology.

### Details:

- Understand issues of intellectual property, copyright, and software licensing.
- Discuss cyberbullying, misinformation, and online etiquette.
- Learn the importance of respecting others' digital rights.
- Promote environmental sustainability in IT usage (e-waste, energy efficiency)

## 10. Course Structure

| Week | Hours | Required Learning Outcomes          | Unit or subject name                       | Learning method                    | Evaluation method                              |
|------|-------|-------------------------------------|--------------------------------------------|------------------------------------|------------------------------------------------|
| 1    |       | Knowledge and Practical Application | Introduction to Personal Computer Hardware | Lectures and Discussion            | Interaction and participation                  |
| 2    |       | Knowledge and Practical Application | PC Assembly                                | Lectures and Discussion            | Interaction and participation                  |
| 3    |       | Knowledge and Practical Application | Advanced Computer Hardware                 | Lectures and Discussion            | Interaction, participation, and daily testin   |
| 4    |       | Knowledge and Practical Application | Preventive Maintenance and Troubleshooting | Lectures and Practical Application | Interact and Participate, and Surprise Quiz    |
| 5    |       | Knowledge and Practical Application | Networking Concepts                        | Lectures and Discussion            | Interaction, Participation, and Quarterly Quiz |
| 6    |       | Knowledge and Practical Application | Applied Networking                         | Lectures and Discussion            | Interaction, Participation, and Repot          |

|    |  |                                     |                                            |                                                 |                                                          |
|----|--|-------------------------------------|--------------------------------------------|-------------------------------------------------|----------------------------------------------------------|
| 7  |  | Knowledge and Practical Application | Laptops and Other Mobile Devices           | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments              |
| 8  |  | Knowledge and Practical Application | Printers                                   | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments              |
| 9  |  | Knowledge and Practical Application | Virtualization and Cloud Computing         | Lectures, Discussion, and Practical Application | Presenting and Explaining Reports Through Presentations  |
| 10 |  | Knowledge and Practical Application | Windows Installation                       | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments              |
| 11 |  | Knowledge and Practical Application | Windows Configuration                      | Lectures, Discussion, and Practical Application | Daily Quiz                                               |
| 12 |  | Knowledge and Practical Application | Mobile, Linux, and macOS Operating Systems | Lectures, Discussion, and Practical Application | Interaction and Participation                            |
| 13 |  | Knowledge and Practical Application | Security                                   | Lectures, Discussion, and Practical Application | Reports                                                  |
| 14 |  | Knowledge and Practical Application | The IT Professional                        | Lectures, Discussion, and Practical Application | Presenting and explaining reports through a presentation |
| 15 |  | Knowledge and Practical Application |                                            | Lectures, Discussion, and Practical Application | Interaction and participation                            |

## 11. Course Evaluation

## 12. Learning and Teaching Resources

|                                                                    |                                                                                                                                             |
|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any)                      | CISCO ACADEMY                                                                                                                               |
| Main references (sources)                                          | Cisco Networking Academy Program                                                                                                            |
| Recommended books and references (scientific journals, reports...) | CISCO                                                                                                                                       |
| Electronic References, Websites                                    | <a href="https://community.cisco.com/t5/networking-academy/ct-p/Netacad">https://community.cisco.com/t5/networking-academy/ct-p/Netacad</a> |

|  |                                                                                                                         |
|--|-------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"><li>▪ <a href="https://community.cisco.com">https://community.cisco.com</a></li></ul> |
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# Course Description Form

## Object Oriented Programing

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|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. Course Name:</b>                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Principles of Programming                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>2. Course Code:</b>                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| ITM 110                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>3. Semester / Year:</b>                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Modular System (Courses)                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>4. Description Preparation Date:</b>                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 1/9/2025                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>5. Available Attendance Forms:</b>                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Weekly – In-Person / Online                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 200                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>7. Course administrator's name (mention all, if more than one name)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Name: Harith Hamoodat<br>Email: hhamoodat@ntu.edu.iq                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>8. Course Objectives</b>                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Course Objectives</b>                                                   | <ol style="list-style-type: none"> <li><b>Understanding Object-Oriented Concepts:</b> <ul style="list-style-type: none"> <li>Introduce students to the fundamental principles of object-oriented programming, including classes, objects, inheritance, polymorphism, encapsulation, and abstraction.</li> </ul> </li> <li><b>Development of Programming Skills:</b> <ul style="list-style-type: none"> <li>Develop students' ability to design and implement object-oriented solutions to programming problems using an object-oriented programming language.</li> </ul> </li> <li><b>Application of OOP Principles:</b> <ul style="list-style-type: none"> <li>Enable students to apply OOP principles to solve real-world problems and develop scalable and maintainable software applications.</li> </ul> </li> <li><b>Enhancement of Problem-Solving Skills:</b> <ul style="list-style-type: none"> <li>Improve students' problem-solving abilities by teaching them how to break down complex problems into smaller, manageable objects and classes.</li> </ul> </li> </ol> |

|  |                                                                                                                                                                                                                                                                        |
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|  | <b>5. Introduction to Advanced OOP Concepts:</b> <ul style="list-style-type: none"> <li>○ Provide an overview of advanced OOP topics such as design patterns, interfaces, and abstract classes to prepare students for more complex programming challenges.</li> </ul> |
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## 9. Teaching and Learning Strategies

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strategy</b> | <p><b>1. Use Real-World Analogies</b></p> <ul style="list-style-type: none"> <li>• Relate OOP concepts to everyday examples (e.g., a "Car" class with "drive()" and "brake()" methods).</li> <li>• Helps students grasp abstraction and encapsulation easily.</li> </ul> <p><b>2. Code-Along and Live Demonstrations</b></p> <ul style="list-style-type: none"> <li>• Instructors write and explain code in real time.</li> <li>• Encourages active learning and helps students see how OOP works in practice.</li> </ul> <p><b>3. Project-Based Learning</b></p> <ul style="list-style-type: none"> <li>• Assign small projects (like building a banking system or student record system).</li> <li>• Reinforces class design, inheritance, and object interaction through hands-on experience.</li> </ul> <p><b>4. Use of Visual Tools</b></p> <ul style="list-style-type: none"> <li>• Integrate UML diagrams and flowcharts to illustrate relationships between classes.</li> <li>• Supports understanding of inheritance, association, and polymorphism.</li> </ul> <p><b>5. Peer Programming and Code Review</b></p> <ul style="list-style-type: none"> <li>• Students work in pairs or groups to solve problems and review each other's code.</li> <li>• Promotes collaboration, critical thinking, and exposure to diverse coding styles.</li> </ul> <p>By employing these strategies, you can create an engaging and effective learning environment for teaching Object-Oriented Programming, helping students develop both theoretical knowledge and practical coding skills.</p> |
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## 10. Course Structure

| Week | Hours | Required Learning Outcomes | Unit or subject name                        | Learning method               | Evaluation method         |
|------|-------|----------------------------|---------------------------------------------|-------------------------------|---------------------------|
| 1    | 8     | 1                          | Introduction to Object-Oriented Programming | Lecture, Discussion, Practice | Participation             |
| 2    | 8     | 1/2                        | Classes and Objects                         | Lecture, Discussion, Practice | Participation             |
| 3    | 8     | 2/4                        | Encapsulation and Data Hiding               | Lecture, Discussion, Practice | Participation, Daily Quiz |

|    |   |              |                                            |                                     |                         |
|----|---|--------------|--------------------------------------------|-------------------------------------|-------------------------|
| 4  | 8 | 2/3/6        | Inheritance                                | Lecture,<br>Practice                | Participation, Pop Quiz |
| 5  | 8 | 3            | Polymorphism                               | Lecture,<br>Discussion,<br>Practice | Midterm Exam            |
| 6  | 8 | 3/6          | Abstraction                                | Lecture,<br>Discussion,<br>Practice | Reports                 |
| 7  | 8 | All (Review) | Mid-Term Review<br>and Exam<br>Preparation | Lecture,<br>Discussion,<br>Practice | Assignments             |
| 8  | 8 | All          | Mid-Term Exam                              | Lecture,<br>Discussion,<br>Practice | Assignments             |
| 9  | 8 | 5            | Design Patterns                            | Lecture,<br>Discussion,<br>Practice | Presentation            |
| 10 | 8 | 5/6          | Advanced – Part 2                          | Lecture,<br>Discussion,<br>Practice | Assignments             |
| 11 | 8 | 5            | Exception Handling                         | Lecture,<br>Discussion,<br>Practice | Daily Test              |
| 12 | 8 | 5            | Unit Testing and<br>Debugging              | Lecture,<br>Discussion,<br>Practice | Participation           |
| 13 | 8 | 5/6          | Refactoring and<br>Code Optimization       | Practice                            | Presentation            |
| 14 | 8 | 6            | Project Work<br>Review                     | Theory &<br>Practice                | Participation           |

|                                                                  |  |  |  |  |  |
|------------------------------------------------------------------|--|--|--|--|--|
| 11. Course Evaluation                                            |  |  |  |  |  |
| <ul style="list-style-type: none"> <li>Periodic tests</li> </ul> |  |  |  |  |  |

- Pop quizzes
- Class participation
- Research assignments, reports, and projects
- Practical and applied tests

| 12. Learning and Teaching Resources           |                                                                                                                         |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any) | " The Object-Oriented Thought Process" by Matt Weisfeld                                                                 |
| Main references (sources)                     | Python 3 Object Oriented Programming by “Dusty Phillips”                                                                |
| Electronic References, Websites               | <a href="https://indico.ictp.it/event/a01167/material/1/4.pdf">https://indico.ictp.it/event/a01167/material/1/4.pdf</a> |

## Course Description Form 2026 (Computer)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| 1. Educational Institution: Mosul Technical College of Administration                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 2. Academic Department/Center: Department of Information Technology Management/Level One                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. Course Title/Code: NTU 102 Computer                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. Available Attendance Formats: Weekly                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. Semester/Year: Spring semester/2026/Bologna Track                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 6. Number of Class Hours (Total): 75                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 7. Date of Preparation: June 30, 2026                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>8. Course Objectives:</b><br>This course aims to provide students with fundamental knowledge of computer usage and its various applications in both academic and practical fields, while developing logical thinking and problem-solving skills using modern software and technological tools. The course also seeks to equip students with the ability to employ computers in scientific research, report preparation, and presentations, thereby enhancing digital competence and employability skills. |
| <b>9. Course Outcomes, Teaching, Learning, and Evaluation Methods</b>                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>A. Cognitive Objectives:</b> <ul style="list-style-type: none"> <li>Introduce students to computer components (hardware and software) and their basic functions.</li> <li>Provide students with knowledge of operating systems and file management.</li> <li>Enable students to understand computer applications in education, scientific research, and management.</li> <li>Introduce students to the fundamentals of information security and data protection.</li> </ul>                               |
| <b>B. Course-Specific Skills:</b> <ul style="list-style-type: none"> <li>Master the use of word processing, spreadsheets, and presentation software.</li> <li>Apply online research skills and analyze digital data.</li> <li>Design professional academic reports using computer tools.</li> <li>Use software to solve practical problems and small-scale projects.</li> </ul>                                                                                                                              |
| <b>C. Affective and Value-Based Objectives:</b> <ul style="list-style-type: none"> <li>Promote teamwork values through collaborative digital projects.</li> <li>Instill the importance of ethical technology use and intellectual property protection.</li> <li>Develop a sense of responsibility towards cybersecurity and personal data.</li> </ul>                                                                                                                                                        |
| <b>D. General and Transferable Skills (Other Employability and Personal Development Skills):</b> <ul style="list-style-type: none"> <li>Enhance digital communication skills and electronic report preparation.</li> <li>Strengthen self-learning abilities using online resources.</li> <li>Provide students with the digital competence required by the job market.</li> <li>Develop planning and organizational skills using supportive software.</li> </ul>                                              |
| <b>E. Teaching and Learning Methods:</b> <ul style="list-style-type: none"> <li>Theoretical lectures supported by presentations.</li> <li>Practical applications in computer labs.</li> <li>Collaborative learning and problem-solving in groups.</li> <li>Self-learning through e-learning platforms and online resources.</li> </ul>                                                                                                                                                                       |
| <b>F. Assessment Methods:</b> <ul style="list-style-type: none"> <li>Theoretical exams (midterm and final).</li> <li>Practical assessment via lab tests.</li> <li>Individual and group assignments/projects.</li> <li>Class participation and interactive activities.</li> </ul>                                                                                                                                                                                                                             |

| 10. Theoretical Course Structure |       |                                                                               |                                                                                                                                                                        |                                  |                                             |
|----------------------------------|-------|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|---------------------------------------------|
| Week                             | Hours | Intended Learning Outcomes                                                    | Unit / Topic                                                                                                                                                           | Teaching Method                  | Assessment Method                           |
| 1                                | 2     | Understand the basic principles of computers and their historical development | <b>Introduction to Computer Principles</b> • Course overview • History of computers • Basic computer terminology • Computer generations                                | Lecture + Presentation           | Quiz + Class Participation                  |
| 2                                | 2     | Differentiate between data and information and identify computer types        | <b>Introduction to Computer Principles</b> • Data and information • Features and uses of computers • Types and classifications of computers                            | Interactive Lecture + Discussion | Written Assignment + Quiz                   |
| 3                                | 2     | Identify computer hardware components                                         | <b>Hardware</b> • Physical components: Input and output devices                                                                                                        | Lecture + Lab Demonstration      | Practical Quiz                              |
| 4                                | 2     | Recognize system unit parts and types of memory                               | <b>Hardware</b> • Computer case: External and internal parts • Types of memory • Ports • Bits and bytes • BIOS                                                         | Lecture + Lab Work               | Lab Report + Test                           |
| 5                                | 2     | Distinguish between software, operating systems, and application programs     | <b>Software</b> • Overview of operating systems • Application programs                                                                                                 | Lecture + Presentation           | Practical Assignment                        |
| 6                                | 2     | Understand programming languages, number systems, and computer platforms      | <b>Software</b> • Programming languages • Number systems • Computer platforms                                                                                          | Lecture + Exercises              | Quiz                                        |
| 7                                | 2     | Identify factors to consider when purchasing a personal computer              | <b>Your Personal Computer</b> • Specifications and purchasing considerations                                                                                           | Lecture + Case Study             | Practical Assignment                        |
| 8                                | 2     | Learn the basics of computer security and software licensing                  | <b>Computer Security and Software Licenses</b> • Introduction to computer security • Ethics in the digital world • Software licenses and types • Intellectual property | Lecture + Discussion             | Quiz + Participation                        |
| 9                                | 2     | Understand types of hacking and malware                                       | <b>Electronic Hacking</b> • Types and sources of hacking • Malware                                                                                                     | Lecture + Video                  | Short Research Assignment                   |
| 10                               | 2     | Learn protection steps and understand computer health hazards                 | <b>Electronic Hacking</b> • Protection against hacking • Computer-related health issues                                                                                | Lecture + Practical Activity     | Quiz                                        |
| 11                               | 2     | Understand operating systems and their classifications                        | <b>Operating Systems</b> • Definition of operating systems • Classification • Examples                                                                                 | Lecture + Lab                    | Practical Test                              |
| 12                               | 2     | Explore Windows OS and its components                                         | <b>Windows Operating System</b> • Installation requirements • New features • Desktop components and Start menu                                                         | Lecture + Practical Work         | Lab Report                                  |
| 13                               | 2     | Manage files, folders, and Control Panel                                      | <b>Using the Computer</b> • Task Manager • Files, folders, and icons • Control Panel and categories                                                                    | Lab Session                      | Practical Test                              |
| 14                               | 2     | Manage printers, software, and basic settings                                 | <b>Using the Computer</b> • Printer management • Setting time and date • Mouse customization • Installing and removing programs                                        | Lab Session                      | Practical Assignment + Test                 |
| 15                               | 2     | Comprehensive review and final project presentations                          | <b>Review</b> • Key concepts revision • Final project presentations • Student feedback and course evaluation                                                           | Discussion + Presentations       | Project Presentation + Practical Evaluation |
| 16                               | 2     | Final assessment of learning outcomes                                         | <b>Final Exam</b>                                                                                                                                                      | Comprehensive Exam               | Final Exam                                  |

| 10. Practical Course Structure |       |                                                                             |                                                 |                                                              |                                                       |
|--------------------------------|-------|-----------------------------------------------------------------------------|-------------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------|
| Week                           | Hours | Intended Learning Outcomes                                                  | Unit / Topic                                    | Teaching Method                                              | Assessment Method                                     |
| 1                              | 2     | Identify the lab environment and perform basic computer operations          | Lab Introduction and Basic Computer Operations  | Practical demonstration + Individual application             | Short practical quiz + Student performance monitoring |
| 2                              | 2     | Understand binary number system and data representation                     | Binary Numbers and Data Representation          | Brief theoretical explanation + Practical exercises          | Practical assignment + Short quiz                     |
| 3                              | 2     | Identify computer hardware components                                       | Exploring Computer Hardware                     | Practical demonstration + Assembling and disassembling parts | Practical lab evaluation                              |
| 4                              | 2     | Understand CPU functions and memory                                         | CPU and Memory                                  | Hands-on practice + Discussion                               | Practical test                                        |
| 5                              | 2     | Learn operating systems and their basic functions                           | Operating Systems                               | Practical implementation + OS experimentation                | Lab assignment                                        |
| 6                              | 2     | Write simple programs in C++                                                | Introduction to C++                             | Practical explanation + Writing basic codes                  | Practical programming test                            |
| 7                              | 2     | Compare and analyze computer specifications to choose the best option       | Buying the Right Computer – Compare and Analyze | Group activity + Case study                                  | Practical report                                      |
| 8                              | 2     | Understand the fundamentals of cybersecurity                                | Cybersecurity (1)                               | Practical demonstration + Simulated attacks                  | Practical test                                        |
| 9                              | 2     | Apply concepts of system and data protection                                | Cybersecurity (2)                               | Hands-on practice + Discussion                               | Practical assignment                                  |
| 10                             | 2     | Learn about digital health protection and the impact of computers on humans | Cybersecurity and Health Care                   | Practical activity + Video presentation                      | Short quiz                                            |
| 11                             | 2     | Install and configure Windows OS                                            | Installing and Configuring Windows System       | Explanation + Hands-on practice                              | Individual practical evaluation                       |
| 12                             | 2     | Learn how to format the hard disk                                           | Hard Disk Formatting (Format)                   | Direct practical implementation                              | Practical test                                        |
| 13                             | 2     | Perform system cleaning and computer maintenance                            | Windows Cleaning and Computer Care              | Practical implementation + Maintenance guidelines            | Lab assignment                                        |
| 14                             | 2     | Install and configure the printer                                           | Installing and Configuring the Printer          | Practical application                                        | Practical test                                        |
| 15                             | 2     | Conduct comprehensive review and present practical projects                 | Review and Project Presentations                | Discussion + Presentations                                   | Practical project presentation                        |
| 16                             | -     | Final evaluation of lab skills                                              | Final Practical Exam                            | Comprehensive practical exam                                 | Final practical assessment                            |

| 11. Infrastructure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Required Textbooks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <i>Essentials of Computer and Its Applications</i> , Ziyad Mohammed Aboud et al., 2014.                 |
| Main References (Sources)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <i>Essentials of Computer and Its Applications</i> , Ziyad Mohammed Aboud et al., 2014.                 |
| Recommended Books and References (Scientific Journals, Reports)                                                                                                                                                                                                                                                                                                                                                                                                                                           | Kevin Hare. (2022). <i>Computer Science Principles: The Foundational Concepts of Computer Science</i> . |
| Electronic References and Websites                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Websites related to <i>Computer Fundamentals</i> .                                                      |
| 12. Course Development Plan                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                         |
| The course content is periodically updated to align with modern technological advancements by incorporating new topics such as information security and cloud computing, and by enhancing the practical component with applications on multiple operating systems and modern programming languages. The plan also emphasizes integrating e-learning and applied projects while linking the course to labor market requirements, with regular reviews based on feedback from students and faculty members. |                                                                                                         |

( Course Description Form)

|                                                                                                                                                                                                                              |                                                                        |                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| 1-Teaching Institution                                                                                                                                                                                                       |                                                                        |                                                                                 |
| <b>Administrative Technical College / Mosul</b>                                                                                                                                                                              |                                                                        |                                                                                 |
| 2- University Department/Centre                                                                                                                                                                                              |                                                                        |                                                                                 |
| Northern Technical University/ Department of Information Technology Management/Level One                                                                                                                                     |                                                                        |                                                                                 |
| 3-Course title/code                                                                                                                                                                                                          |                                                                        |                                                                                 |
| Human rights and democracy / NTU100                                                                                                                                                                                          |                                                                        |                                                                                 |
| 4- Available forms of attendance                                                                                                                                                                                             |                                                                        |                                                                                 |
| presence                                                                                                                                                                                                                     |                                                                        |                                                                                 |
| 5- Semester/Year                                                                                                                                                                                                             |                                                                        |                                                                                 |
| Fall semester /2026                                                                                                                                                                                                          |                                                                        |                                                                                 |
| 6-Number of hours tuition (total)                                                                                                                                                                                            |                                                                        |                                                                                 |
| 30 hours                                                                                                                                                                                                                     |                                                                        |                                                                                 |
| 7- Date of production/revision of this specification                                                                                                                                                                         |                                                                        |                                                                                 |
| 1/9/2025                                                                                                                                                                                                                     |                                                                        |                                                                                 |
| 8-(Course Objectives )General Course Objectives                                                                                                                                                                              |                                                                        |                                                                                 |
| 1 .Providing students with basic concepts related to democracy and human rights.<br>2 .Understanding political systems, electoral methods, and public freedoms.<br>3. Developing students' legal and constitutional culture. |                                                                        |                                                                                 |
| 1– Course outcomes, teaching, learning and assessment methods                                                                                                                                                                |                                                                        |                                                                                 |
| Learning Outcomes (LOS)                                                                                                                                                                                                      | Learning and teaching methods                                          | Evaluation methods                                                              |
| 1The student learns about the nature of human rights and democracy                                                                                                                                                           | Theoretical lectures using educational tools (PowerPoint presentations | Daily and monthly tests                                                         |
| 2-To explain the difference between kinds of human rights and democracy and political regimes                                                                                                                                | Theoretical lectures                                                   | management Solving exercises within the lecture and assigning external homework |
| 3–To apply everything he                                                                                                                                                                                                     | View the companies' work and achievements                              | Discussions and dialogues                                                       |



| has learned to his Rights and duties                        |       |                                  |                                                                                                                                                          |                 |                         |
|-------------------------------------------------------------|-------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------|
| 2- Course steuctuer (theoretical and scientific vocabulary) |       |                                  |                                                                                                                                                          |                 |                         |
| Week                                                        | Hours | Required learning outcomes       | Name of the unit/topic                                                                                                                                   | Teaching method | Evaluation method       |
| First                                                       | 2     | Student understanding the lesson | Human rights, the definition, the objectives, human rights in ancient civilizations divine laws                                                          | Lecture         | Daily and monthly tests |
| Second                                                      | 2     | Student understanding the lesson | Human Rights Contemporary and Modern History                                                                                                             | Lecture         | Daily and monthly tests |
| Third                                                       | 2     | Student understanding the lesson | NGOs and human rights (ICJ, Amnesty International, Human Rights Watch, national human rights organizations)                                              | Lecture         | Daily and monthly tests |
| fourth                                                      | 2     | Student understanding the lesson | Human Rights Iraqi Constitution Between Theory and Reality / Relationship between Human Rights and Public Freedoms                                       | Lecture         | Daily and monthly tests |
| Fifth                                                       | 2     | Student understanding the lesson | Economic, social and cultural human rights, civil and political human rights / New human rights: the right to development, right to a clean environment, | Lecture         | Daily and monthly tests |

|            |   |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                |         |                         |
|------------|---|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------|
|            |   |                                  | right to peace.                                                                                                                                                                                                                                                                                                                                                                                                |         |                         |
| Sixth      | 2 | Student understanding the lesson | Guarantees respect for a protection of human rights at the national level, guarantees the constitution and laws, guarantees the principle of rule of law, guarantees constitutional oversight, guarantees freedom of the press and public opinion, the role of non-governmental organizations respecting and protecting human rights / guarantee respect and protection of human rights at international level | Lecture | Daily and monthly tests |
| Seventh    | 2 | Student understanding the lesson | The General Theory of Liberties: The origin of rights and liberties, legislator's position on public rights and liberties, the use of the term public liberties.                                                                                                                                                                                                                                               | Lecture | Daily and monthly tests |
| The eighth | 2 | Student understanding the lesson | Regulating public freedoms. The historical development of concept of equality. The modern development of concept of equality. Gender equality and Equality among                                                                                                                                                                                                                                               | Lecture | Daily and monthly tests |

|            |   |                                  |                                                                                                                                                       |         |                         |
|------------|---|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------|
|            |   |                                  | individuals.                                                                                                                                          |         |                         |
| Ninth      | 2 | Student understanding the lesson | Freedom education, freedom of the press, freedom of assembly, freedom of association, freedom of work, right to own property.                         | Lecture | Daily and monthly tests |
| tenth      | 2 | Student understanding the lesson | Freedom of trade and industry, freedom of security and peace of mind, freedom of movement and return, freedom of trade and industry, Freedom of women | Lecture | Daily and monthly tests |
| Eleventh   | 2 | Student understanding the lesson | The future of public freedoms                                                                                                                         | Lecture | Daily and monthly tests |
| Twelfth    | 2 | Student understanding the lesson | The crime genocide                                                                                                                                    | Lecture | Daily and monthly tests |
| Thirteenth | 2 | Student understanding the lesson | Human rights in Iraqi constitution                                                                                                                    | Lecture | Daily and monthly tests |
| Fourteenth | 2 | Student understanding the lesson | Democracy, characteristics, types, elections, the definition and types                                                                                | Lecture | Daily and monthly tests |
| Fifteen    | 2 | Student understanding of lesson  | Contemporary political systems                                                                                                                        | Lecture | Daily and monthly       |

## **2–Aligning learning outcomes with the National Qualifications Framework:**

- \*Formulating clear and measurable learning outcomes.
- \*Linking course outcomes to the skills and knowledge required by the labor market.

## **3– Developing teaching methods and techniques**

- \*Introducing active learning methods (such as problem–based learning, brainstorming, and P2 studies.
- \*Using modern technology in presenting the material (such as e–learning, educational videos, simulations.

## **4– Enhancing students' critical and analytical thinking skills:**

| 2– infrastructure                                                        |                                                                                                                  |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Classrooms, laboratories and workshops                                   | Available                                                                                                        |
| Required books and curriculum                                            | Dr. Muhammad Yunus Al–Sayegh, Human Rights and Democracy.                                                        |
| Main references (sources)                                                | Publications on democracy and human rights available in the college library and the university's central library |
| Recommended books and references<br>(scientific journals, reports,.....) | Scientific and Applied Research Projects                                                                         |
| Electronic references and websites                                       | Human rights websites.                                                                                           |



## Course description form

### Course description:

This course description provides a summary of the most important characteristics of the course and the learning outcomes that the student is expected to achieve, demonstrating whether he or she has made the most of the learning opportunities available. It must be linked to the program description.

|                                       |                                                                         |
|---------------------------------------|-------------------------------------------------------------------------|
| 1. Educational institution            | Northern Technical University / Administrative Technical College, Mosul |
| 2. Scientific department/center       | Department of Information Technology Management/Level One               |
| 3. Course name/code                   | Principles of Statistics/TCMM105                                        |
| 4. Available attendance forms         | Mandatory / Face to face                                                |
| 5. Semester/year                      | Fall semester/2026                                                      |
| 6. Number of study hours (total)      | 75 hours                                                                |
| 7. Date this description was prepared | 1/9/2025                                                                |
| 8. Course objectives                  |                                                                         |

The course aims to enable the student to become familiar with the vocabulary and concepts of the principles of statistics because of its importance in practical life in general and its prominent role in completing the research that the student seeks to complete through learning about arithmetic means, frequency tables, standard deviation, correlation, regression, and other related topics, and also getting to know Types of statistics, data collection methods, and comparison between them so that the researcher can choose the best method that helps him in completing the work.

|                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10. Course outcomes and teaching, learning and evaluation methods                                                                                                                                                                                                           |
| <p>A- Cognitive objectives</p> <p>A1- Learn everything related to the basics of statistics.</p> <p>A2- Learn about statistical topics and their branches.</p>                                                                                                               |
| <p>B- Course-specific skills objectives.</p> <p>B1- The ability to deal with data and know how to analyze it correctly and to serve administrative work.</p>                                                                                                                |
| <p>C- Emotional and value goals</p> <p>C1- Developing the student's research skills.</p>                                                                                                                                                                                    |
| <p>D- Transferable general and qualifying skills (other skills related to employability and personal development).</p> <p>D1- Trying to make the student rely on his personal skills in analyzing data and choosing statistical methods appropriate to research topics.</p> |

| 11. Course structure |        |                            |                                                                                             |                                                                            |                                           |
|----------------------|--------|----------------------------|---------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-------------------------------------------|
| The week             | hours  | Required learning outcomes | Name of the unit/topic                                                                      | Teaching method                                                            | Evaluation method                         |
| First                | hours4 | Introduction to statistics | A historical overview of statistics, what statistics are.                                   | Theoretical presentation and clarification                                 | Student participation and daily oral exam |
| Second               | hours4 | Statistical terminology    | Statistical variables, data sources, data collection methods, research population, samples. | Theoretical presentation and clarification                                 | Student participation and daily oral exam |
| Third                | hours4 | Statistical tables         | Frequency distribution, double frequency distribution.                                      | Presentation , theoretical clarification, and solving statistical problems | Student participation and daily oral exam |
| Fourth               | hours4 | Statistical frequencies    | Relative frequency, ascending clustered frequency, descending clustered frequency.          | Presentation , theoretical clarification, and solving statistical problems | Student participation and daily oral exam |



|           |        |                              |                                                                       |                                                                            |                                           |
|-----------|--------|------------------------------|-----------------------------------------------------------------------|----------------------------------------------------------------------------|-------------------------------------------|
| Fifth     | hours4 | Data graphs                  | Bar graphs, rectangle graphs, circle graphs, line graphs, histograms. | Presentation , theoretical clarification, and solving statistical problems | Student participation and daily oral exam |
| Sixth     | hours4 | Statistical symbols          | Addition symbol, multiplication symbol.                               | Presentation , theoretical clarification, and solving statistical problems | Student participation and daily oral exam |
| Seventh   | hours4 | Measures of central tendency | Arithmetic mean, harmonic mean.                                       | Presentation , theoretical clarification, and solving statistical problems | Student participation and daily oral exam |
| Eighth    | hours4 | Measures of central tendency | Harmonic mean, geometric mean, square mean.                           | Presentation , theoretical clarification, and solving statistical problems | Student participation and daily oral exam |
| Ninth     | hours4 | Measures of central tendency | Mode, mediator.                                                       | Presentation , theoretical clarification, and solving statistical problems | Student participation and daily oral exam |
| The tenth | hours4 | Retail metrics               | Segmentation metrics for tabulated                                    | Presentation , theoretical clarification,                                  | Student participation and                 |

|            |        |                        |                                                                                                                                                                                    |                                                                           |                                           |
|------------|--------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------------|
|            |        |                        | and non-tabulated data                                                                                                                                                             | and solving statistical problems                                          | daily oral exam                           |
| Eleventh   | hours4 | Measures of dispersion | Range, mean deviation, standard deviation.                                                                                                                                         | Presentation, theoretical clarification, and solving statistical problems | Student participation and daily oral exam |
| Twelfth    | hours4 | Measures of dispersion | Coefficient of dispersion based on range, coefficient of dispersion based on interquartile deviation, coefficient of dispersion based on mean deviation, coefficient of variation. | Presentation, theoretical clarification, and solving statistical problems | Student participation and daily oral exam |
| Thirteenth | hours4 | Measures of dispersion | Standard score, correlation, rank correlation                                                                                                                                      | Presentation, theoretical clarification, and solving statistical problems | Student participation and daily oral exam |
| Fourteenth | hours4 | Measures of dispersion | Coefficient of fit, coupling coefficient,                                                                                                                                          | Presentation, theoretical clarification, and solving                      | Student participation and daily oral      |

|           |         |                        |                           |                                                                            |                                           |
|-----------|---------|------------------------|---------------------------|----------------------------------------------------------------------------|-------------------------------------------|
|           |         |                        | simple linear regression. | statistical problems                                                       | exam                                      |
| Fifteenth | hours 4 | Measures of dispersion | Matrices                  | Presentation , theoretical clarification, and solving statistical problems | Student participation and daily oral exam |

#### 10. Infrastructure:

##### Sources:

- ◆ Principles of Statistics, Dr. Taha Hussein Al-Zubaidi.
- ◆ Introduction to Statistics, Dr. Khasha Al-Rawi.
- ◆ Statistics, Dr. Mahmoud Hassan Al-Mashhadani and Lecturer Amir Hanna Hormuz.
- ◆ Principles of Scientific Research, Dr. Azhar Al-Samak, Lecturer Safaa Al-Safawi, and Dr. Fabis Saeed Al-Fahadi.
- ◆ Principles of Statistics and Statistical Methods, Dr. Mahmoud Al-Mashhadani.

## Course Description Form 2026 (Principles of Management)

|                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Educational Institution: Mosul Technical College of Administration                                                                                                                                                                                                                                                                                                                     |
| 2. Academic Department/Center: Department of Information Technology Management/Level One                                                                                                                                                                                                                                                                                                  |
| 3. Course Title/Code: TCMM 104 Principles of Management                                                                                                                                                                                                                                                                                                                                   |
| 4. Available Attendance Formats: Weekly/face to face                                                                                                                                                                                                                                                                                                                                      |
| 5. Semester/Year:/Spring semester/ Bologna Track/2026                                                                                                                                                                                                                                                                                                                                     |
| 6. Number of Class Hours (Total): 75                                                                                                                                                                                                                                                                                                                                                      |
| 7. Date of Preparation: June 30, 2026                                                                                                                                                                                                                                                                                                                                                     |
| 8. Course Objectives: To introduce students to the principles and functions performed by managers, regardless of their position within the organizational structure of an organization. These functions include planning, decision-making, organizing, leading, motivating, and controlling.                                                                                              |
| 9. Course Outcomes, Teaching, Learning, and Evaluation Methods                                                                                                                                                                                                                                                                                                                            |
| A. Cognitive Objectives: To introduce students to management as the process of planning, decision-making, organizing, leading, motivating, and controlling, which involves an organization's acquisition, integration, unification, and efficient transformation of human, material, financial, and information resources into outputs to achieve its goals and adapt to its environment. |
| B. Course Skill Objectives<br><ul style="list-style-type: none"> <li>- The ability to set the organization's basic goals and guide subordinates toward achieving those goals.</li> <li>- The ability to lead the organization toward its established goals according to a plan prepared in a scientific and programmatic manner.</li> </ul>                                               |
| C. Emotional and Value-Based Goals<br><ul style="list-style-type: none"> <li>- The ability to interact and understand people.</li> <li>- The manager's knowledge and understanding of the type of work and the ability to visualize and see dimensions.</li> </ul>                                                                                                                        |
| D. General and Transferable Skills (other skills related to employability and personal development).<br><ul style="list-style-type: none"> <li>- The ability to set the organization's basic goals and guide subordinates toward achieving those goals.</li> </ul>                                                                                                                        |
| E. Teaching and Learning Methods<br><ul style="list-style-type: none"> <li>- Direct instruction (lecturing) with the use of educational technology tools</li> <li>- Classroom discussion and interaction through assignments</li> <li>- Learning through practical application of materials requiring departmental laboratories</li> <li>- - Project-Based Learning Strategy</li> </ul>   |
| F. Assessment Methods<br><ul style="list-style-type: none"> <li>*Periodic Tests</li> <li>*Surprise Tests</li> <li>*Classroom Interaction and Participation</li> <li>*Research Assignments, Reports, and Seminars</li> <li>*Practical and Applied Tests</li> </ul>                                                                                                                         |

| 10. Course Structure |       |                                                     |                                                                                              |                          |                               |
|----------------------|-------|-----------------------------------------------------|----------------------------------------------------------------------------------------------|--------------------------|-------------------------------|
| Week                 | Hours | Intended Learning Outcomes                          | Unit / Topic                                                                                 | Teaching Method          | Assessment Method             |
| 1                    | 5     | Introduction to Management                          | Define the concept of management and its main functions                                      | Lectures and discussions | Interaction and participation |
| 2                    | 5     | Historical Development of Management Theories       | Explain the historical stages of management thought                                          | Lectures and discussions | Interaction and participation |
| 3                    | 5     | Planning: Types and Tools                           | Distinguish between types of planning (short and long-term) and their tools                  | Lectures and discussions | Interaction and participation |
| 4                    | 5     | Organizational Structures and Culture               | Describe types of organizational structures and their relationship to organizational culture | Lectures and discussions | Interaction and participation |
| 5                    | 5     | Leadership Theories and Styles                      | Identify leadership theories and patterns                                                    | Lectures and discussions | Interaction and participation |
| 6                    | 5     | Motivation and Team Dynamics                        | Explain motivation theories and the fundamentals of teamwork                                 | Lectures and discussions | Interaction and participation |
| 7                    | 5     | Midterm Exam                                        | Assess cognitive and practical understanding of the studied material                         | Lectures and discussions | Interaction and participation |
| 8                    | 5     | Control Processes and Systems                       | Define the concept of control and its types                                                  | Lectures and discussions | Interaction and participation |
| 9                    | 5     | Performance Measurement and Management              | Explain performance measurement methods                                                      | Lectures and discussions | Interaction and participation |
| 10                   | 5     | Strategic Planning and SWOT Analysis                | Explain strategic planning and the SWOT tool                                                 | Lectures and discussions | Interaction and participation |
| 11                   | 5     | Strategy Formulation and Implementation             | Describe the steps of formulating and implementing strategies                                | Lectures and discussions | Interaction and participation |
| 12                   | 5     | Recruitment and Selection                           | Define the steps and criteria of the recruitment process                                     | Lectures and discussions | Interaction and participation |
| 13                   | 5     | Training and Performance Evaluation                 | Explain the importance of training and its role in improving performance                     | Lectures and discussions | Interaction and participation |
| 14                   | 5     | Production Planning and Quality Management          | Identify the basics of production planning and quality management                            | Lectures and discussions | Interaction and participation |
| 15                   | 5     | Business Ethics and Corporate Social Responsibility | Define managerial ethics and corporate social responsibility                                 | Lectures and discussions | Interaction and participation |
| 16                   | –     | Final Exam                                          | Assess overall understanding of course outcomes                                              | –                        | –                             |

| <b>11. Infrastructure</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Required Textbooks</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <i>Prescribed textbook for the Principles of Management course</i>                                                                                                                                                                                                                  |
| <b>Main References (Sources)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | - Khalil Mohammed Hassan, <i>Principles of Management with Emphasis on Business Administration</i> , 1991- Sinan Ghaleb Al-Muradhi, <i>Organization Theory</i> , University of Science and Technology, 2013- Khalil Al-Shammaa & Khudair Hammoud, <i>Organization Theory</i> , 2007 |
| <b>Recommended Books and References (Scientific Journals, Reports)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <i>Scientific journals, reports, and electronic references</i>                                                                                                                                                                                                                      |
| <b>Electronic References and Websites</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <i>Websites related to Management Information Systems (MIS)</i>                                                                                                                                                                                                                     |
| <b>12. Course Development Plan</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                     |
| <p>The development plan for the <i>Principles of Management</i> course aims to update the content in line with the latest management theories and strengthen the practical aspect by integrating case studies and hands-on activities. Educational technologies such as simulations and online assessments will be incorporated, focusing on enhancing leadership and teamwork skills. The plan also includes introducing short projects, conducting SWOT analyses, and connecting topics to real-world institutions. The course will be periodically reviewed based on student feedback and labor market needs.</p> |                                                                                                                                                                                                                                                                                     |

## Course Description Form

**Course Description:**

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

|                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 1. Teaching Institution                                                                                                                                                                                                                                                                                                                                                                           | Administrative Technical College / Mosul                                     |
| 2. University/Department/Centre                                                                                                                                                                                                                                                                                                                                                                   | Northern Technical University / Information Technology Management Department |
| 3. Course title/code                                                                                                                                                                                                                                                                                                                                                                              | Principles of Economics /TCMM107                                             |
| 4. Modes of Attendance offered                                                                                                                                                                                                                                                                                                                                                                    | Weekly/face to face                                                          |
| 5. Semester/Year                                                                                                                                                                                                                                                                                                                                                                                  | Spring semester/2026                                                         |
| 6. Number of hours tuition (total)                                                                                                                                                                                                                                                                                                                                                                | 75 hours                                                                     |
| 7. Date of production/revision of this specification                                                                                                                                                                                                                                                                                                                                              | 25/ 06 /2026                                                                 |
| <b>8. Aims of the Course:</b> <ul style="list-style-type: none"><li>• Study the principles of economics and help the student understand it.</li><li>• Improving the student's level in economics.</li><li>• Developing methods of economic thinking and unleashing the latent energies of students. Developing economic thinking among students helps them move towards other sciences.</li></ul> |                                                                              |

| 9. Course Structure |       |                                                   |                            |                       |                          |
|---------------------|-------|---------------------------------------------------|----------------------------|-----------------------|--------------------------|
| Week ILOs           | Hours | ILOs                                              | Unit/Module or Topic Title | Teaching Method       | Assessment Method        |
| The First           | 4     | Economic Concepts                                 | Economic Concepts          | Theoretical           | Discussion and Questions |
| The Second          | 3     | Demand theory                                     | Market equilibrium         | Theoretical           | Discussion and Questions |
|                     | 1     | Exam.                                             |                            | Exam.                 | Exam.                    |
| The Third           | 4     | Supply and equilibrium theory                     | Market equilibrium         | Theoretical           | Discussion and Questions |
| The Fourth          | 3     | Elasticities of demand and supply                 | Elasticities               | Theoretical           | Discussion and Questions |
|                     | 1     | Exam.                                             |                            | Exam.                 | Exam.                    |
| Fifth               | 4     | Consumer demand and utility                       | Consumer demand theory     | Theoretical           | Discussion and Questions |
| VI                  | 1     | Exam.                                             |                            | Exam.                 | Exam.                    |
|                     | 3     | Production function                               | Production Theory          | Theoretical           | Discussion and Questions |
| seventh             | 3     | Production Costs in the short run                 | Production Costs           | Theoretical           | Discussion and Questions |
|                     | 1     | Exam.                                             |                            | Exam.                 | Exam.                    |
| VIII                | 3     | Production Costs in the long run                  | Production Costs           | Theoretical           | Discussion and Questions |
|                     | 1     | Exam.                                             |                            | Exam.                 | Exam.                    |
| ninth               | 4     | Perfectly Competitive Market (aggregate analysis) | Markets                    | Theoretical           | Discussion and Questions |
| The tenth           | 4     | Perfectly competitive market (at the unit level)  | Markets                    | Theoretical           | Discussion and Questions |
| eleventh            | 1     | Exam.                                             |                            |                       | Exam.                    |
|                     | 3     | Pure Monopoly Market                              | Markets                    | Information economics | Information economics    |
| twelveth            | 3     | Information economics                             | Information economics      | Theoretical           | Discussion and Questions |
|                     | 1     | Exam.                                             |                            |                       | Exam.                    |
| Thirteenth          | 3     | The general level of prices                       | Inflation theory           | Theoretical           | Discussion and Questions |
|                     | 1     | Exam.                                             |                            |                       | Exam.                    |
| Fourteenth          | 3     | Aggregate supply and demand                       | Aggregate Equilibrium      | Theoretical           | Discussion and Questions |
|                     | 1     | Exam.                                             |                            |                       | Exam.                    |
| Fifteenth           | 1     | sustainable development                           | Sustainable Development    | Theoretical           | Discussion and Questions |
|                     | 2     | Sustainable development goals                     |                            |                       |                          |
|                     | 1     | Exam.                                             |                            |                       | Exam.                    |

#### 11. Infrastructure:

##### Sources:

- \* Salvatore, D., & Diulio, E. A. (2011), Schaum's Outline of Principles of Economics, McGraw-Hill
- \* Salvatore, Dominic (1992), Theories of Unit Economics: Theories and Questions, Schaum's Abstracts Series, Office of University Publications, Algeria..
- \* Delio, Eugene A., Macroeconomic Theory, Schaum's Outline Series, International House for Publishing and .Distribution, Cairo, Egypt



## **12. Curriculum development plan:**

1. The current century is witnessing economic problems that differ from previous traditional problems due to the changes that have occurred as a result of climate change and the emergence of alternative energy generated from renewable resources such as the sun, air, and wind, and the diminishing role of oil and gas, in addition to information technology. Therefore, it is necessary to develop curricula and courses related to economic studies.
2. Focusing on future studies based on scientific analysis of reality, in order to predict the economic future of the region and the global economy, and to equip students with the skills of analysis, thinking, and creativity in solving current and future problems and making appropriate decisions regarding those problems.

# Course Description Form

## Principles of Programming

|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Principles of Programming                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2. Course Code:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| ITM 109                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 3. Semester / Year:                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Modular System (Courses)                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 4. Description Preparation Date:                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 1/9/2025                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 5. Available Attendance Forms:                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Weekly – In-Person / Online                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 6. Number of Credit Hours (Total) / Number of Units (Total)         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 175                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 7. Course administrator's name (mention all, if more than one name) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Name: Harith Hamoodat<br>Email: hhamoodat@ntu.edu.iq                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 8. Course Objectives                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Course Objectives                                                   | <ol style="list-style-type: none"><li>1. Understand the fundamental principles of programming using the C language.</li><li>2. Develop problem-solving and algorithmic thinking skills.</li><li>3. Learn how to write, compile, and debug C programs.</li><li>4. Understand and apply various programming structures such as loops, conditionals, functions, and arrays.</li><li>5. Gain hands-on experience through exercises and lab projects.</li></ol>                                                                                  |
| 9. Teaching and Learning Strategies                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Strategy                                                            | <ol style="list-style-type: none"><li>1. Theoretical Methods (In-Class)<ul style="list-style-type: none"><li>• Traditional lectures introducing programming concepts in C.</li><li>• Explaining control structures, functions, arrays, and pointers.</li><li>• Use of whiteboard and PowerPoint presentations.</li><li>• Class discussions encouraging questions and debugging code collaboratively.</li><li>• Weekly quizzes and in-class assignments to reinforce learning.</li></ul></li><li>2. Practical Methods (In the Lab)</li></ol> |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"> <li>• Hands-on programming in C.</li> <li>• Applying theoretical concepts in realistic scenarios.</li> <li>• Mini projects (e.g., calculator, registration system).</li> <li>• Team-based work to foster collaboration.</li> </ul> <p>3. Technological Methods</p> <ul style="list-style-type: none"> <li>• Use of development tools like Code::Blocks or Visual Studio Code.</li> <li>• E-learning platforms such as Google Classroom or Moodle.</li> <li>• Sharing useful links like <a href="http://www.learn-c.org">www.learn-c.org</a> and <a href="http://www.geeksforgeeks.org">www.geeksforgeeks.org</a>.</li> </ul> <p>4. Problem-Based Learning (PBL)</p> <ul style="list-style-type: none"> <li>• Presenting real-world problems requiring analytical solutions.</li> <li>• Encouraging logical and algorithmic thinking.</li> </ul> |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 10. Course Structure

| Week | Hours | Required Learning Outcomes | Unit or subject name          | Learning method               | Evaluation method         |
|------|-------|----------------------------|-------------------------------|-------------------------------|---------------------------|
| 1    | 7     | 1                          | Introduction to C Programming | Lecture, Discussion, Practice | Participation             |
| 2    | 7     | 1/2                        | Data Types                    | Lecture, Discussion, Practice | Participation             |
| 3    | 7     | 2                          | Control Structures – Part 1   | Lecture, Discussion, Practice | Participation, Daily Quiz |
| 4    | 7     | 2/6                        | Control Structures – Part 2   | Lecture, Practice             | Participation, Pop Quiz   |
| 5    | 7     | 3                          | Functions – Part 1            | Lecture, Discussion, Practice | Midterm Exam              |
| 6    | 7     | 3/6                        | Functions – Part 2            | Lecture, Discussion, Practice | Reports                   |

|    |   |       |                           |                               |               |
|----|---|-------|---------------------------|-------------------------------|---------------|
| 7  | 7 | 4     | Arrays & Strings – Part 1 | Lecture, Discussion, Practice | Assignments   |
| 8  | 7 | 4     | Arrays & Strings – Part 2 | Lecture, Discussion, Practice | Assignments   |
| 9  | 7 | 4     | Pointers – Part 1         | Lecture, Discussion, Practice | Presentation  |
| 10 | 7 | 4/6   | Pointers – Part 2         | Lecture, Discussion, Practice | Assignments   |
| 11 | 7 | 5     | File Handling             | Lecture, Discussion, Practice | Daily Test    |
| 12 | 7 | 5     | Advanced Topics           | Lecture, Discussion, Practice | Participation |
| 13 | 7 | 5     | Project Presentations     | Practice                      | Presentation  |
| 14 | 7 | 6/7/8 | Review                    | Theory & Practice             | Participation |

### 11. Course Evaluation

- Periodic tests
- Pop quizzes
- Class participation
- Research assignments, reports, and projects
- Practical and applied tests

### 12. Learning and Teaching Resources

|                                               |                                                                         |
|-----------------------------------------------|-------------------------------------------------------------------------|
| Required textbooks (curricular books, if any) | "C Programming: A Modern Approach" by K. N. King - Required             |
| Main references (sources)                     | C language programming by " Mike Banahan , Declan brady and mark doran" |

|                                                                       |                                                                                                                                                                                                           |
|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Recommended books and references<br>(scientific journals, reports...) | "The C Programming Language" by Brian W. Kernighan and<br>Dennis M. Ritchie - Recommended                                                                                                                 |
| Electronic References, Websites                                       | <ul style="list-style-type: none"> <li>• <a href="http://www.learn-c.org">www.learn-c.org</a><br/><a href="http://www.geeksforgeeks.org/c-programming">www.geeksforgeeks.org/c-programming</a></li> </ul> |

## Course Description Form

|                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. Course Name:</b>                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Principles of Accounting                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>2. Course Code:</b>                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| TCMM106                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>3. Semester / Year:</b>                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Fall Semester /2026/Bologna Track                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Description Preparation Date:</b>                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 1/9/2025                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>5. Available Attendance Forms:</b>                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| In-person/Face to face                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 75 hours                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>7. Course administrator's name (mention all, if more than one name)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Name: anas ahsan ahmed<br>Email: anas_ahsan@ntu.edu.iq                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>8. Course Objectives</b>                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Course Objectives                                                          | <ul style="list-style-type: none"> <li>understand the nature of accounting and its role in measuring and communicating financial information.</li> <li>Develop skills in recording, classifying, and analyzing financial transactions <b>and preparing financial statements in accordance with generally accepted accounting principles.</b></li> <li>Enhance students' ability to use financial information <b>in decision-making and evaluating the financial performance of organizations</b></li> </ul> |
| <b>9. Teaching and Learning Strategies</b>                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Strategy                                                                   | <ul style="list-style-type: none"> <li>Familiarize with accounting terms that govern the accounting process</li> <li>Identify and apply fundamental accounting principles.</li> <li>Classify basic accounting documents.</li> <li>Understand the accounting ledger group</li> </ul>                                                                                                                                                                                                                         |

## **B. Course Skill Objectives**

- Enable the student to define accounting.
- Distinguish the fundamental principles of accounting.
- Explain the importance of accounting in the business environment, organizations, and all commercial projects, whether large or small.
- Understand the role of accounting in financial decision-making.
- Know how to post from documents to the journal and prepare the trial balance

### **Teaching and Learning Methods**

- Direct instruction (lectures) using educational technology tools
- Classroom discussion and interaction through assignments
- Learning through practical application of materials requiring department laboratories
- Project-Based Learning Strategy

### **Assessment Methods**

- \*Periodic Tests
- \*Surprise Tests
- \*Classroom Interaction and Participation
- \*Research Assignments and Reports
- \*Practical and Applied Tests

## **C- Affective and Value-Based Objectives**

**C1- Strengthening the spirit of belonging to a team within the institution and the desire to provide the best**

**C2- Strengthening the desire to compete to raise the educational level**

**C3- Strengthening the sense of belonging to the specialty and developing the desire to work in Financial Institutions**

### **Teaching and Learning Methods**

- 1. Periodic field visits to Financial Institutions**
- 2. Experience, actual practice, and interaction with staff through practical application (summer training) conducted by the student in close contact with beneficiaries**
- 3. Psychological Motivation and emotionally through open and direct discussions with students.**

**D - General and transferable skills (other skills related to employability and personal development).**

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"> <li>• D1: Teach the student skills in writing financial research and reports.</li> <li>• D2: Teach the student how to link theoretical knowledge with practical application that will be practiced at work.</li> <li>• D3: Teach the student how to handle accounting errors and find the legal solution by correcting the entries.</li> <li>• D4: Teach the student how to reconcile accounts with documents and the ledger, ensuring there is no manipulation.</li> </ul> |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 10. Course Structure

| Week | Hours | Required Learning Outcomes          | Unit or subject name                                                                        | Learning method                    | Evaluation method                              |
|------|-------|-------------------------------------|---------------------------------------------------------------------------------------------|------------------------------------|------------------------------------------------|
| 1    | 4     | Knowledge and Practical Application | General introduction to Accounting Principles and familiarization with key accounting terms | Lectures and Discussion            | Interaction and participation                  |
| 2    | 4     | Knowledge and Practical Application | Introduction to single, double, and compound journal entries                                | Lectures and Discussion            | Interaction and participation                  |
| 3    | 4     | Knowledge and Practical Application | How to analyze financial transactions and record them in financial documents                | Lectures and Discussion            | Interaction, participation, and daily testin   |
| 4    | 4     | Knowledge and Practical Application | Posting from financial documents to the journal.                                            | Lectures and Practical Application | Interact and Participate, and a Surprise Quiz  |
| 5    | 4     | Knowledge and Practical Application | Detailed and in-depth posting to the journal                                                | Lectures and Discussion            | Interaction, Participation, and Quarterly Quiz |
| 6    | 4     | Knowledge and Practical Application | Posting from the journal to the ledge                                                       | Lectures and Discussion            | Interaction, Participation, and Repot          |
| 7    | 4     | Knowledge and Practical Application | The ledger and how to create a page for each account                                        | Lectures, Discussion, and Practica | Interaction, Participation, And                |



|           |          |                                            |                                                                           |                                                        |                                                                 |
|-----------|----------|--------------------------------------------|---------------------------------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------|
|           |          |                                            |                                                                           | <b>Application</b>                                     | <b>Assignments</b>                                              |
| <b>8</b>  | <b>4</b> | <b>Knowledge and Practical Application</b> | <b>How to prepare the trial balance</b>                                   | <b>Lectures, Discussion, and Practical Application</b> | <b>Interaction, Participation, And Assignments</b>              |
| <b>9</b>  | <b>4</b> | <b>Knowledge and Practical Application</b> | <b>Trial balance by totals</b>                                            | <b>Lectures, Discussion, and Practical Application</b> | <b>Presenting and Explaining Reports Through Presentation</b>   |
| <b>10</b> | <b>4</b> | <b>Knowledge and Practical Application</b> | <b>Trial balance by balances</b>                                          | <b>Lectures, Discussion, and Practical Application</b> | <b>Interaction, Participation, and Assignments</b>              |
| <b>11</b> | <b>4</b> | <b>Knowledge and Practical Application</b> | <b>Adjusting entries</b>                                                  | <b>Lectures, Discussion, and Practical Application</b> | <b>Daily Quiz</b>                                               |
| <b>12</b> | <b>4</b> | <b>Knowledge and Practical Application</b> | <b>Handling accounting errors.</b>                                        | <b>Lectures, Discussion, and Practical Application</b> | <b>Interaction and Participation</b>                            |
| <b>13</b> | <b>4</b> | <b>Knowledge and Practical Application</b> | <b>Preparing the balance sheet.</b>                                       | <b>Lectures, Discussion, and Practical Application</b> | <b>Reports</b>                                                  |
| <b>14</b> | <b>4</b> | <b>Knowledge and Practical Application</b> | <b>Completing the final accounts and presenting financial statements.</b> | <b>Lectures, Discussion, and Practical Application</b> | <b>Presenting and explaining reports through a presentation</b> |
| <b>15</b> | <b>4</b> | <b>Knowledge and Practical Application</b> | <b>Review of the accounting cycle.</b>                                    | <b>Lectures, Discussion, and Practical Application</b> | <b>PowerPoint Presentatio</b>                                   |

#### **11.Course Evaluation**

**Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc**

#### **12.Learning and Teaching Resources**

**Required textbooks (curricular books, if any)**

**Main references (sources)**

**Publications on Related to Accounting and Its Fundamental technologies are available in the college library and the university's**

|                                                                               |                                                                                                    |
|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
|                                                                               | central library.                                                                                   |
| <b>Recommended books and references<br/>(scientific journals, reports...)</b> | <b>Principles of Accounting (Foundations and Procedures)" – Asst. Prof. Ahmed Wajih Al-Dabbagh</b> |
| <b>Electronic References, Websites</b>                                        | <b>Websites related to Accounting and its various fields</b>                                       |

( Course Description Form)

|                                                                                                                                                                                                                                                                                                                              |                                                                        |                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| 1-Teaching Institution                                                                                                                                                                                                                                                                                                       |                                                                        |                                                                                 |
| <b>Administrative Technical College / Mosul</b>                                                                                                                                                                                                                                                                              |                                                                        |                                                                                 |
| 2- University Department/Centre                                                                                                                                                                                                                                                                                              |                                                                        |                                                                                 |
| Northern Technical University / Information Technology Management Department                                                                                                                                                                                                                                                 |                                                                        |                                                                                 |
| 3-Course title/code                                                                                                                                                                                                                                                                                                          |                                                                        |                                                                                 |
| Professional ethics/NTU204                                                                                                                                                                                                                                                                                                   |                                                                        |                                                                                 |
| 4- Available forms of attendance                                                                                                                                                                                                                                                                                             |                                                                        |                                                                                 |
| Presence/face to face                                                                                                                                                                                                                                                                                                        |                                                                        |                                                                                 |
| 5- Semester/Year                                                                                                                                                                                                                                                                                                             |                                                                        |                                                                                 |
| Spring semester /2026                                                                                                                                                                                                                                                                                                        |                                                                        |                                                                                 |
| 6-Number of hours tuition (total)                                                                                                                                                                                                                                                                                            |                                                                        |                                                                                 |
| 30 hours                                                                                                                                                                                                                                                                                                                     |                                                                        |                                                                                 |
| 7- Date of production/revision of this specification                                                                                                                                                                                                                                                                         |                                                                        |                                                                                 |
| 1/9/2025                                                                                                                                                                                                                                                                                                                     |                                                                        |                                                                                 |
| 8-(Course Objectives )General Course Objectives                                                                                                                                                                                                                                                                              |                                                                        |                                                                                 |
| 1. Understand the concept of ethics.<br>2. Explain the general rules of ethics.<br>3. Identify the sources of ethics.<br>4. Clarify the most important ethical values.<br>5. Distinguish the importance of ethics for the individual and society.<br>6. Conduct activities related to the concept of ethics and its sources. |                                                                        |                                                                                 |
| 1- Course outcomes, teaching, learning and assessment methods                                                                                                                                                                                                                                                                |                                                                        |                                                                                 |
| Learning Outcomes (LOS)                                                                                                                                                                                                                                                                                                      | Learning and teaching methods                                          | Evaluation methods                                                              |
| 1- The student must be able to understand the basic concepts of professional ethics.                                                                                                                                                                                                                                         | Theoretical lectures using educational tools (PowerPoint presentations | Daily and monthly tests                                                         |
| -2 The student must be able to discuss and debate the ethics of various professions.                                                                                                                                                                                                                                         | Theoretical lectures                                                   | management Solving exercises within the lecture and assigning external homework |

|                                                                          |       |                                           |                                                                        |                           |                         |
|--------------------------------------------------------------------------|-------|-------------------------------------------|------------------------------------------------------------------------|---------------------------|-------------------------|
| 3-The student must be able to analyze professional ethics in public jobs |       | View the companies' work and achievements |                                                                        | Discussions and dialogues |                         |
| 2- Course structure (theoretical and scientific vocabulary)              |       |                                           |                                                                        |                           |                         |
| Week                                                                     | Hours | Required learning outcomes                | Name of the unit/topic                                                 | Teaching method           | Evaluation method       |
| First                                                                    | 2     | Student understanding the lesson          | The Concept & Origin of Ethics                                         | Lecture                   | Daily and monthly tests |
| Second                                                                   | 2     | Student understanding the lesson          | Work and Professional Ethics                                           | Lecture                   | Daily and monthly tests |
| Third                                                                    | 2     | Student understanding the lesson          | Professional Ethics                                                    | Lecture                   | Daily and monthly tests |
| fourth                                                                   | 2     | Student understanding the lesson          | Values and Professional Ethics                                         | Lecture                   | Daily and monthly tests |
| Fifth                                                                    | 2     | Student understanding the lesson          | Patterns of unethical behavior in profession/administrative corruption | Lecture                   | Daily and monthly tests |
| Sixth                                                                    | 2     | Student understanding the lesson          | Professional Ethics for Business Organizations                         | Lecture                   | Daily and monthly tests |
| Seventh                                                                  | 2     | Student understanding the lesson          | Professional Conduct and Work Relations                                | Lecture                   | Daily and monthly tests |
| The eighth                                                               | 2     | Student understanding the lesson          | The impact of employment contracts on administrative work              | Lecture                   | Daily and monthly tests |

|            |   |                                  |                                                                                                                                            |         |                         |
|------------|---|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------|
| Ninth      | 2 | Student understanding the lesson | The concept of public employee as a worker, the financial rights administrative employees, and functional rights administrative employees. | Lecture | Daily and monthly tests |
| tenth      | 2 | Student understanding the lesson | Examples professional ethics according administrative specializations                                                                      | Lecture | Daily and monthly tests |
| Eleventh   | 2 | Student understanding the lesson | Ethics of Practical Applied Professions                                                                                                    | Lecture | Daily and monthly tests |
| Twelfth    | 2 | Student understanding the lesson | Creating Initiative                                                                                                                        | Lecture | Daily and monthly tests |
| Thirteenth | 2 | Student understanding the lesson | The Relationship with the Surrounding Environment                                                                                          | Lecture | Daily and monthly tests |
| Fourteenth | 2 | Student understanding the lesson | The surrounding environment and relationship humans, and artist's culture, ethics and relationship to surrounding environment.             | Lecture | Daily and monthly tests |
| Fifteen    | 2 | Student understanding of lesson  | Practical models professional ethics                                                                                                       | Lecture | Daily and monthly tests |

## 1– Curriculum development plan

### **2–Aligning learning outcomes with the National Qualifications Framework:**

- \*Formulating clear and measurable learning outcomes.
- \*Linking course outcomes to the skills and knowledge required by the labor market.

### **3– Developing teaching methods and techniques**

- \*Introducing active learning methods (such as problem–based learning, brainstorming, and P2 studies.
- \*Using modern technology in presenting the material (such as e–learning, educational videos, simulations.

### **4– Enhancing students' critical and analytical thinking skills:**

## 2– infrastructure

|                                                                          |                                                                            |
|--------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Classrooms, laboratories and workshops                                   | Available                                                                  |
| Required books and curriculum                                            | Methodical book                                                            |
| Main references (sources)                                                | Books, references and research available in university and college library |
| Recommended books and references<br>(scientific journals, reports,.....) | Scientific and Applied Research Projects                                   |
| Electronic references and websites                                       | Websites on ethics, professional ethics, public service                    |

|  |                         |
|--|-------------------------|
|  | and administrative work |
|--|-------------------------|

## Course Description Form / Operations Management

|                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Educational institution                                                                                                                                                          |
| Mosul Technical Administrative College                                                                                                                                              |
| 2. Scientific Department / Center                                                                                                                                                   |
| Information Technology Management Department / Second level                                                                                                                         |
| 3. Course Name / Code                                                                                                                                                               |
| Operations Management / ITM206                                                                                                                                                      |
| 4. Available attendance forms                                                                                                                                                       |
| Weekly/ Face to face in person                                                                                                                                                      |
| 5. semester/year                                                                                                                                                                    |
| Fall semester                                                                                                                                                                       |
| 6. Number of study hours (total)                                                                                                                                                    |
| 60 Hours                                                                                                                                                                            |
| 7. Date this description was prepared                                                                                                                                               |
| 1/9/2025                                                                                                                                                                            |
| 8. Course objectives                                                                                                                                                                |
| The course seeks to enrich students with a set of concepts and theories encompassing diverse implications and connotations, while clarifying the distinctions among these theories. |
| 9. Course outcomes, teaching, learning and assessment methods                                                                                                                       |



## A. Cognitive Objectives

- Enable students to understand the principles of operations management and its role in improving operational efficiency.
- Develop knowledge related to the design, planning, and improvement of production and service processes.
- Provide an analytical presentation of operations management theories, focusing on achieving operational effectiveness and competitive advantage.

## B. Skills-Based Objectives

- Utilize course applications as a foundation for graduation projects focused on improving and developing operational processes.
- Formulate a student perspective on operations management theories from a behavioral standpoint, analyzing differences among models and their implications in production and service environments.

## Learning Outcomes

- Explain the fundamental concepts of operations management and its main functions (design, planning, operations and control).
- Analyze internal and external factors affecting operational efficiency and effectiveness using tools such as SWOT and PESTEL.
- Distinguish among strategies for process design and evaluate their suitability for production and service activities.
- Apply decision-making methods in operations management using quantitative and behavioral models.
- Assess the impact of quality culture and continuous improvement on operational performance.
- Develop a simplified operational plan for a production or service project.
- Employ analytical and critical thinking to improve processes and solve operational problems.

## Teaching and Learning Methods

- Theoretical lectures.
- Student presentations.
- Case studies.
- Group discussions and applied workshops.
- Individual or group projects.
- Problem-Based Learning (PBL).
- Use of simulations or management games, when available.

## 10. Course structure

| Week      | Hours | Intended Learning Outcomes        | Topic                                                | Teaching Method | Assessment Method |
|-----------|-------|-----------------------------------|------------------------------------------------------|-----------------|-------------------|
| Week 1    | 4     | Knowledge & Practical Application | Introduction to Production and Operations Management | Theoretical     | Exams and Reports |
| Weeks 2–3 | 4     | Knowledge & Practical             | Production and                                       | Theoretical     | Exams and Reports |

|                              |   |                                   |                                                                                                                    |                         |                   |
|------------------------------|---|-----------------------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------|
|                              |   | Application                       | Operations Management in Organizations ,<br>Administrative Functions of the Production and Operations Manager      |                         |                   |
| Weeks 4–5                    | 4 | Knowledge & Practical Application | Production and Productivity, Efficiency and Effectiveness                                                          | Theoretical & Practical | Exams and Reports |
| Weeks 6–7                    | 4 | Knowledge & Practical Application | Practical Exercises on Production and Productivity, Efficiency, and Effectiveness                                  | Practical               | Exams and Reports |
| Weeks 8–9                    | 4 | Knowledge & Practical Application | Strategic Planning: Corporate Strategy, Business Unit Strategy, and Operations Strategy                            | Theoretical             | Exams and Reports |
| Weeks 10–12                  | 4 | Knowledge & Practical Application | Strategy and Competitive Advantage; Strategic Decisions in Operations; Demand Forecasting                          | Theoretical             | Exams and Reports |
| Weeks 13–15                  | 4 | Knowledge & Practical Application | Demand Forecasting Methods; Product Planning and Development                                                       | Theoretical & Practical | Exams and Reports |
| 11. Infrastructure           |   |                                   |                                                                                                                    |                         |                   |
| 1- Required textbooks        |   |                                   |                                                                                                                    |                         |                   |
| 2- Main references (sources) |   |                                   | <ul style="list-style-type: none"> <li>Production and Operations Management – Dr. Sabah Majid Al-Najjar</li> </ul> |                         |                   |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                |
| A- Recommended books and references<br>(scientific journals, reports, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Scientific journals in the fields of information<br>technology |
| B - Electronic references, websites...                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Specialized websites                                           |
| 12. Curriculum Development Plan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                |
| <p>- Meeting with the faculty at the end of each semester to review the curricula and how to develop them, add new lessons to the current curricula, record the course content in the curriculum form annually, and propose any changes or amendments to the curricula for approval by the College Council and subsequently by the University Council, in accordance with university directives. The curricula are also published and documented on the college website, and lectures are uploaded electronically to the website.</p> <p>- Providing the college library with modern scientific books from well-known international publishing houses, which enhance the vocabulary of the lessons given to the college.</p> |                                                                |

## Course Description Form / Organization Management

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Educational institution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Mosul Technical Administrative College                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 2. Scientific Department / Center                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Information Technology Management Department/Second level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 3. Course Name/Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Organization Management / ITM212                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 4. Available attendance forms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Weekly/face to face                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 5. semester/year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Fall semester                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 6. Number of study hours (total)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 60 hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 7. Date this description was prepared                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 1/9/2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 8. Course objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| An attempt to enrich students with a set of concepts and theories that include many implications and connotations, while clarifying the differences between these theories.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 9. Course outcomes, teaching, learning and assessment methods                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <p><b>A- Cognitive objectives</b></p> <ul style="list-style-type: none"> <li>- Enabling students to learn about organizational management</li> <li>- Developing cognitive aspects related to organizational management</li> <li>- Providing a cognitive presentation of organizational theories from an analytical perspective.</li> </ul> <p><b>B- Course skill objectives.</b></p> <p>1 - Adopting material applications as a basis for preparing graduation projects</p> <p>2- The students' vision depends on the vocabulary of organizational theory from a behavioral perspective, while trying to clarify the differences between the implications of organizational theory.</p> <p><b>Learning outcomes</b></p> <p>By the end of this course, the student is expected to be able to: Explaining the basic concepts of management its main functions are (planning, organizing, directing, and controlling).</p> <p>1. <b>Analysis of the organization's internal and external environment</b> Using analysis tools such as SWOT and PESTEL.</p> |

2. **Distinguish between different types of organizational structures.** Moreover, evaluate its suitability to the nature of the organization.
3. **Interpretation of administrative decision-making methods** and apply appropriate models in practical situations.
4. **Organizational culture assessment** and its impact on the performance and behavior of employees.
5. **Design a simple management plan** for a project or business case.
6. **Employing modern management skills** (such as leadership, change management, time management).
7. **Using analytical and critical thinking tools** to solve real management problems.

#### Teaching and learning methods

- Theoretical lectures.
- Presentations by students.
- Case studies.
- Group discussion and practical workshops.
- Individual or group projects.
- Problem-based learning (PBL).
- Use simulations or management games if available.

#### 10. Course structure

| Evaluation method | Teaching method | Topic name                                                                                          | Required learning outcomes          | Hours | week            |
|-------------------|-----------------|-----------------------------------------------------------------------------------------------------|-------------------------------------|-------|-----------------|
| Tests and reports | theoretical     | Introduction to the study of the organization: the nature and concept of the organization           | Knowledge and practical application | 4     | first           |
| Tests and reports | Theoretical     | Types of Organizations<br>Classification of Organizations /<br>Traditional Theories of Organization | Knowledge and practical application | 4     | Second & third  |
| Tests and reports | Theoretical     | Organizational thought and organization science                                                     | Knowledge and practical application | 4     | Fourth & fifth  |
| Tests and reports | Theoretical     | Organizational effectiveness and organizational                                                     | Knowledge and practical             | 4     | Sixth & seventh |

|                          |                    |                                                  |                                            |          |                                               |
|--------------------------|--------------------|--------------------------------------------------|--------------------------------------------|----------|-----------------------------------------------|
|                          |                    | <b>change</b>                                    | <b>application</b>                         |          |                                               |
| <b>Tests and reports</b> | <b>Theoretical</b> | <b>Organizational behavior</b>                   | <b>Knowledge and practical application</b> | <b>4</b> | <b>Eighth &amp; ninth</b>                     |
| <b>Tests and reports</b> | <b>Theoretical</b> | <b>Environmental analysis of organizations</b>   | <b>Knowledge and practical application</b> | <b>4</b> | <b>tenth, eleventh &amp; twelfth</b>          |
| <b>Tests and reports</b> | <b>Theoretical</b> | <b>Social Responsibility and Business Ethics</b> | <b>Knowledge and practical application</b> | <b>4</b> | <b>thirteenth, fourteenth &amp; fifteenth</b> |

#### 11. Infrastructure

1- Required textbooks

2- Main references (sources)

Organizational Management - Theories and Concepts  
 Author: Dr. Ahmed Maher  
 Organizational Management - A Contemporary Analytical Approach  
 Author: Dr. Bashar Abdullah Al-Khafaji

A- Recommended books and references (scientific journals, reports, etc.)

Scientific journals in the fields of information technology

B - Electronic references, websites...

Specialized websites

#### 12. Curriculum Development Plan

- Meeting with the faculty at the end of each semester to review the curricula and how to develop them, add new lessons to the current curricula, record the course content in the curriculum form annually, and propose any changes or amendments to the curricula for approval by the College Council and subsequently by the University Council, in accordance with university directives. The curricula are also published and documented on the college website, and lectures are uploaded electronically to the website.

- Providing the college library with modern scientific books from well-known international publishing houses, which enhance the vocabulary of the lessons given to the college.

## Course Description Form

|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Human Resources Management                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 2. Course Code:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>ELM 207</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 3. Semester / Year:                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Fall Semester/ 2026                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Description Preparation Date:                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 1/9/2025                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 5. Available Attendance Forms:                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| In-person/face to face                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 6. Number of Credit Hours (Total) / Number of Units (Total)         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 60 hours                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 7. Course administrator's name (mention all, if more than one name) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Name: Buthainah Luqman Ahmed<br>Email:buthainah_y65@ntu.edu.Iq      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 8. Course Objectives                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Course Objectives</b>                                            | <ul style="list-style-type: none"> <li>– Understanding and Analyzing Systems: The student will be able to understand the basic principles of human resource management and identify its vital role in attracting and selecting human resources, then work to evaluate employees and the training needs required to increase efficiency and effectiveness.</li> <li>– Applying Technological Concepts: The student will acquire the ability to link the theoretical concepts of human resource management with contemporary technological applications. This includes understanding modern technologies, such as digital human resource management, and how they can be employed to achieve the strategic objectives of organizations.</li> </ul> |

|                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                   | <p><b>B – Course Skill Objectives.</b></p> <p>– <b>Problem-solving skills using training skills:</b><br/> <b>The student will develop the ability to identify organizational problems that can be solved.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <p><b>9. Teaching and Learning Strategies</b></p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <p><b>Strategy</b></p>                            | <p><b>A. Cognitive Objectives</b></p> <ul style="list-style-type: none"> <li>- <b>Understanding and Analyzing Systems:</b> The student will be able to understand the basic principles of human resource management and identify its vital role in attracting and selecting human resources, then work to evaluate employees and the training needs required to increase efficiency and effectiveness.</li> <li>- <b>Applying Technological Concepts:</b> The student will acquire the ability to link the theoretical concepts of human resource management with contemporary technological applications. This includes understanding modern technologies, such as digital human resource management, and how they can be employed to achieve the strategic objectives of organizations.</li> </ul> <p><b>B. Course Skill Objectives</b></p> <ul style="list-style-type: none"> <li>- <b>Problem-solving skills using training skills:</b> The student will develop the ability to identify organizational problems that can be solved or mitigated using employee management decisions and propose innovative technology-based solutions, with a focus on operational efficiency and improving the decision-making process.</li> <li>- <b>Job Analysis and Design Skills:</b> The student will acquire the ability to analyze the functional and non-functional requirements of human resource management and design appropriate solutions using tools and techniques to break down the job to analyze it and then develop a job design model.</li> </ul> <p><b>Teaching and Learning Methods</b></p> <ul style="list-style-type: none"> <li>- Direct instruction (lectures) using educational technology tools</li> <li>- Classroom discussion and interaction through assignments</li> </ul> |



|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>- Learning through practical application of materials requiring department laboratories</p> <p>- Project-Based Learning Strategy</p> <p>Assessment Methods</p> <ul style="list-style-type: none"> <li>*Periodic Tests</li> <li>*Surprise Tests</li> <li>*Classroom Interaction and Participation</li> <li>*Research Assignments and Reports</li> <li>*Practical and Applied Tests</li> </ul> <p>C- Affective and Value-Based Objectives</p> <p>C1- Strengthening the spirit of belonging to a team within the institution and the desire to provide the best</p> <p>C2- Strengthening the desire to compete to raise the educational level</p> <p>C3- Strengthening the sense of belonging to the specialty and developing the desire to work in information institutions</p> <p>Teaching and Learning Methods</p> <ol style="list-style-type: none"> <li>1. Periodic field visits to administrative and technical institutions</li> <li>2. Experience, actual practice, and interaction with staff through practical application (summer training) conducted by the student in close contact with beneficiaries</li> <li>3. Psychological Motivation and emotionally through open and direct discussions with students.</li> </ol> <p>D - General and transferable skills (other skills related to employability and personal development).</p> <p>D1 - Teaching students research and report writing skills.</p> <p>D2 - Teaching students how to connect theoretical knowledge with practical application that they will experience at work.</p> <p>D3 - Teaching students how to access and analyze information sources, and how to derive and document a summary of the information obtained through objective analysis of these sources.</p> <p>D4 - Teaching students how to prepare a job analysis and description template for use in recruitment.</p> |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 10. Course Structure

| Week | Hours | Required Learning Outcomes          | Unit or subject name                                                                               | Learning method                     | Evaluation method                              |
|------|-------|-------------------------------------|----------------------------------------------------------------------------------------------------|-------------------------------------|------------------------------------------------|
| 1    | 4     | Knowledge and Practical Application | General Introduction, Basic Concepts, and Human Resource Management                                | Lectures and Discussion             | Interaction and participation                  |
| 2    | 4     | Knowledge and Practical Application | Importance and Objectives of Human Resource Management and its Relationship with Other Departments | Lectures and Discussion             | Interaction and participation                  |
| 3    | 4     | Knowledge and Practical Application | Job Analysis and Description                                                                       | Lectures and Discussion             | Interaction, participation, and daily testing  |
| 4    | 4     | Knowledge and Practical Application | Human Resource Management Strategies                                                               | Lectures and Practical Application  | Interact and Participate, and Surprise Quiz    |
| 5    | 4     | Knowledge and Practical Application | Human Resource Planning                                                                            | Lectures and Discussion             | Interaction, Participation, and Quarterly Quiz |
| 6    | 4     | Knowledge and Practical Application | Human Resource Needs Assessment                                                                    | Lectures and Discussion             | Interaction, Participation, and Report         |
| 7    | 4     | Knowledge and Practical Application | Initial Preparation                                                                                | Lectures, Discussion, and Practical | Interaction, Participation, and Assignments    |

|    |   |                                     |                                              |                                                 |                                                          |
|----|---|-------------------------------------|----------------------------------------------|-------------------------------------------------|----------------------------------------------------------|
|    |   |                                     |                                              | Application                                     |                                                          |
| 8  | 4 | Knowledge and Practical Application | Human Resource Development                   | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments              |
| 9  | 4 | Knowledge and Practical Application | Human Resource Evaluation                    | Lectures, Discussion, and Practical Application | Presenting and Explaining Reports Through Presentation   |
| 10 | 4 | Knowledge and Practical Application | Human Resource Training                      | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments              |
| 11 | 4 | Knowledge and Practical Application | Organizational Development                   | Lectures, Discussion, and Practical Application | Daily Quiz                                               |
| 12 | 4 | Knowledge and Practical Application | Career Path                                  | Lectures, Discussion, and Practical Application | Interaction and Participation                            |
| 13 | 4 | Knowledge and Practical Application | Occupational Safety                          | Lectures, Discussion, and Practical Application | Reports                                                  |
| 14 | 4 | Knowledge and Practical Application | Industrial Security                          | Lectures, Discussion, and Practical Application | Presenting and explaining reports through a presentation |
| 15 | 4 | Knowledge and Practical Application | Human Resource Management Information System | Lectures, Discussion, and Practical Application | Interaction and participation                            |

### 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

### 12. Learning and Teaching Resources

|                                               |                                                                                                                        |
|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any) |                                                                                                                        |
| Main references (sources)                     | Publications on human resources management are available in the college library and the university's central library.. |
| Recommended books and references              | Dr. Mu'ayyad Saeed Al-Salem, Human                                                                                     |

|                                   |                                     |
|-----------------------------------|-------------------------------------|
| (scientific journals, reports...) | Resources Department                |
| Electronic References, Websites   | Human Resources Management websites |

## Course Description Form

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                      |                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| <b>1. Educational Institution</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                      |                                                                                                  |
| Technical College of Management / Mosul                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                      |                                                                                                  |
| <b>2. Academic Department</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                      |                                                                                                  |
| Department of Information Technology Management/second level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                      |                                                                                                  |
| <b>3. Course Title / Code</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                      |                                                                                                  |
| Numerical Analysis/ITM216                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                      |                                                                                                  |
| <b>4. Available Attendance Modes</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                      |                                                                                                  |
| Presence/FACE TO FACE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                      |                                                                                                  |
| <b>5. Semester / Year</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                      |                                                                                                  |
| Spring Semester / 2026                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                      |                                                                                                  |
| <b>6. Total Credit Hours</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                      |                                                                                                  |
| 75 Hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                      |                                                                                                  |
| <b>7. Date of Description Preparation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                      |                                                                                                  |
| 1/9/2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                      |                                                                                                  |
| <b>8. Course Objectives (General Objectives of the Course)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                      |                                                                                                  |
| <ol style="list-style-type: none"> <li>1- To enable the student to acquire mathematical skills to solve problems that cannot be solved analytically, including understanding the types of errors and how to calculate them.</li> <li>2- To provide fundamental knowledge of a wide range of problem-solving techniques (e.g., algorithms, reasoning).</li> <li>3- To save time and effort, especially in equations that require extensive iterations to reach a solution.</li> <li>4- To develop different thinking methods and the ability to judge the validity and plausibility of solutions.</li> </ol> |                                                                                                                                      |                                                                                                  |
| <b>9. Course Outcomes, Teaching &amp; Learning Methods, and Evaluation Methods</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                      |                                                                                                  |
| <b>Outcomes</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Teaching &amp; Learning Methods</b>                                                                                               | <b>Evaluation Methods</b>                                                                        |
| Understanding concepts of different numerical methods, their characteristics, and applications. Recognizing the importance of these concepts in practical life. Developing and discovering new numerical concepts.                                                                                                                                                                                                                                                                                                                                                                                          | <ul style="list-style-type: none"> <li>- Theoretical lectures</li> <li>- Interactive explanations with real-life examples</li> </ul> | <ul style="list-style-type: none"> <li>- Short written quizzes</li> <li>- Assignments</li> </ul> |

|                                                                                                                              |                                                                           |                             |
|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-----------------------------|
| Ability to summarize and comprehend class material.<br>Ability to engage in classroom discussions.                           | - Visual presentations<br>- Classroom discussions                         | - Midterm exam<br>- Reports |
| Motivation to engage with and understand the course. Ability to read course material and complete homework enthusiastically. | - In-class practical exercises<br>- Manual problem-solving using formulas | - Homework<br>- Final exam  |

### 10. Course Structure (Theoretical and Practical Topics)

| Week    | Hours   | Learning Outcomes                                  | Unit / Topic | Teaching Method | Evaluation Method                          |
|---------|---------|----------------------------------------------------|--------------|-----------------|--------------------------------------------|
| Week 1  | 4 hours | Introduction to Number Systems                     |              | Lecture         | Presentation, Explanation, Q&A, Discussion |
| Week 2  | 4 hours | Sources and Types of Errors                        |              | Lecture         | Presentation, Explanation, Q&A, Discussion |
| Week 3  | 4 hours | Computer-Based Calculations                        |              | Lecture         | Presentation, Explanation, Q&A, Discussion |
| Week 4  | 4 hours | Problem Solving Exercises                          |              | Lecture         | Presentation, Explanation, Q&A, Discussion |
| Week 5  | 4 hours | Rolle's Theorem and General Rolle's Theorem        |              | Lecture         | Presentation, Explanation, Q&A, Discussion |
| Week 6  | 4 hours | Mean Value Theorem and Integral Mean Value Theorem |              | Lecture         | Presentation, Explanation, Q&A, Discussion |
| Week 7  | 4 hours | Minimum Value Theorem Intermediate Value Theorem   |              | Lecture         | Presentation, Explanation, Q&A, Discussion |
| Week 8  | 4 hours | Taylor's Theorem and Cauchy's Theorem              |              | Lecture         | Presentation, Explanation, Q&A, Discussion |
| Week 9  | 4 hours | Problem Solving and Midterm Exam                   |              | —               | —                                          |
| Week 10 | 4 hours | Bisection Method                                   |              | Lecture         | Presentation, Explanation, Q&A, Discussion |
| Week 11 | 4 hours | False Position Method                              |              | Lecture         | Presentation, Explanation, Q&A, Discussion |
| Week 12 | 4 hours | Newton-Raphson Method                              |              | Lecture         | Presentation, Explanation, Q&A, Discussion |
| Week 13 | 4 hours | Secant Method                                      |              | Lecture         | Presentation, Explanation, Q&A, Discussion |

|         |         |                              |  |         |                                            |
|---------|---------|------------------------------|--|---------|--------------------------------------------|
| Week 14 | 4 hours | Fixed-Point Iteration Method |  | Lecture | Presentation, Explanation, Q&A, Discussion |
| Week 15 | 4 hours | Order of Convergence         |  | Lecture | Presentation, Explanation, Q&A, Discussion |

### 11. Course Development Plan

- 1– Regular curriculum updates to align with labor market developments (Curriculum Update Committee, Scientific Committee), including:
- 2– Organizing scientific seminars and conferences aimed at curriculum development.
- 3– Following up on scientific advancements in the field of specialization.

### 12. Infrastructure

- **Classrooms, Labs, and Workshops:** Available
- **Required Textbooks:** *(To be specified)*
- **Main References (Sources):** *(Reference name to be specified)*
- **Recommended References:** (e.g., scientific journals, reports, etc.): *(Reference name to be specified)*
- **Electronic Resources (Websites, etc.):** Include electronic links (e.g., department's YouTube page)

(Course Description Form)

|                                                                                                                                                                                                                                                                                                                     |                                                                        |                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| 1-Teaching Institution                                                                                                                                                                                                                                                                                              |                                                                        |                                                                                 |
| <b>Administrative Technical College / Mosul</b>                                                                                                                                                                                                                                                                     |                                                                        |                                                                                 |
| 2- University Department/Centre                                                                                                                                                                                                                                                                                     |                                                                        |                                                                                 |
| Northern Technical University/Information techniques management                                                                                                                                                                                                                                                     |                                                                        |                                                                                 |
| 3-Course title/code                                                                                                                                                                                                                                                                                                 |                                                                        |                                                                                 |
| English Language/ NTU200                                                                                                                                                                                                                                                                                            |                                                                        |                                                                                 |
| 4- Available forms of attendance                                                                                                                                                                                                                                                                                    |                                                                        |                                                                                 |
| Presence/face to face                                                                                                                                                                                                                                                                                               |                                                                        |                                                                                 |
| 5- Semester/Year                                                                                                                                                                                                                                                                                                    |                                                                        |                                                                                 |
| Fall semester/ Second Level /2026                                                                                                                                                                                                                                                                                   |                                                                        |                                                                                 |
| 6-Number of hours tuition (total)                                                                                                                                                                                                                                                                                   |                                                                        |                                                                                 |
| 30 hours                                                                                                                                                                                                                                                                                                            |                                                                        |                                                                                 |
| 7- Date of production/revision of this specification                                                                                                                                                                                                                                                                |                                                                        |                                                                                 |
| 1/9/2025                                                                                                                                                                                                                                                                                                            |                                                                        |                                                                                 |
| 8-(Course Objectives )General Course Objectives                                                                                                                                                                                                                                                                     |                                                                        |                                                                                 |
| 1 .Provide students with basic concepts related to the use of English language<br>2. Provide students with basic vocabulary<br>3 .Enable the students to construct simple sentences.<br>4 .Enable the students to communicate effectively.<br>5. Provide students with the basic culture and literature of English. |                                                                        |                                                                                 |
| 1– Course outcomes, teaching, learning and assessment methods                                                                                                                                                                                                                                                       |                                                                        |                                                                                 |
| Learning Outcomes (LOS)                                                                                                                                                                                                                                                                                             | Learning and teaching methods                                          | Evaluation methods                                                              |
| 1The student learns about the nature of English language.                                                                                                                                                                                                                                                           | Theoretical lectures using educational tools (PowerPoint presentations | Daily and monthly tests                                                         |
| 2-To explain to construct sentences in English.                                                                                                                                                                                                                                                                     | Theoretical lectures                                                   | management Solving exercises within the lecture and assigning external homework |



|                                                                                                                                |                                           |                           |
|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|---------------------------|
| 3-Developing students' ability to communicate effectively. Provide student with the basic knowledge of culture and literature. | View the companies' work and achievements | Discussions and dialogues |
|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|---------------------------|

## 2- Course structure (theoretical and scientific vocabulary)

| Week       | Hours | Required learning outcomes       | Name of the unit/topic          | Teaching method | Evaluation method       |
|------------|-------|----------------------------------|---------------------------------|-----------------|-------------------------|
| First      | 2     | Student understanding the lesson | Parts of speech: basic          | Lecture         | Daily and monthly tests |
| Second     | 2     | Student understanding the lesson | Main verbs and model verbs      | Lecture         | Daily and monthly tests |
| Third      | 2     | Student understanding the lesson | Auxiliary verb and linking verb | Lecture         | Daily and monthly tests |
| fourth     | 2     | Student understanding the lesson | Present simple tense            | Lecture         | Daily and monthly tests |
| Fifth      | 2     | Student understanding the lesson | Short story 1                   | Lecture         | Daily and monthly tests |
| Sixth      | 2     | Student understanding the lesson | Short story 2                   | Lecture         | Daily and monthly tests |
| Seventh    | 2     | Student understanding the lesson | Past simple tense               | Lecture         | Daily and monthly tests |
| The eighth | 2     | Student understanding the lesson | Future simple                   | Lecture         | Daily and monthly tests |

|            |   |                                  |                         |         |                         |
|------------|---|----------------------------------|-------------------------|---------|-------------------------|
| Ninth      | 2 | Student understanding the lesson | Short story 3           | Lecture | Daily and monthly tests |
| tenth      | 2 | Student understanding the lesson | Short story 4           | Lecture | Daily and monthly tests |
| Eleventh   | 2 | Student understanding the lesson | Basic tips of writing   | Lecture | Daily and monthly tests |
| Twelfth    | 2 | Student understanding the lesson | Basic tips conversation | Lecture | Daily and monthly tests |
| Thirteenth | 2 | Student understanding the lesson | Providing words         | Lecture | Daily and monthly tests |
| Fourteenth | 2 | Student understanding the lesson | Review of Material      | Lecture | Daily and monthly tests |
| Fifteen    | 2 | Student understanding of lesson  | General Exam            | Lecture | Daily and monthly tests |

## 1– Curriculum development plan

### 2–Aligning learning outcomes with the National Qualifications

#### Framework:

\*Formulating clear and measurable learning outcomes.

\*Linking course outcomes to the skills and knowledge required by the labor market.

### 3– Developing teaching methods and techniques

\*Introducing active learning methods (such as problem–based learning, brainstorming, and P2 studies.

\*Using modern technology in presenting the material (such as e–learning, educational videos, simulations.

#### **4– Enhancing students' critical and analytical thinking skills:**

##### 2– infrastructure

|                                                                                                                                                               |                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Classrooms, laboratories and workshops                                                                                                                        | Available                                                                                          |
| Required books and curriculum                                                                                                                                 | Publications on English Language available in college library and the university's central library |
| Main references (sources)                                                                                                                                     |                                                                                                    |
| Recommended books and references<br>New Headway Plus (Beginner) ,<br>John and Liz Soars, Oxford<br>(Student’s Book)<br><br>(Scientific journals, reports,…….) | Scientific and Applied Research Projects                                                           |
| Electronic references and websites                                                                                                                            | English language websites.                                                                         |

## Course Description Form

|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Database Design                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 2. Course Code:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| ITM209                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 3. Semester / Year:                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Spring Semester/ 2026                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Description Preparation Date:                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 1/9/2025                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 5. Available Attendance Forms:                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| In-person/face to face                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 6. Number of Credit Hours (Total) / Number of Units (Total)         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 60 hours                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 7. Course administrator's name (mention all, if more than one name) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Name: Noor Nabeel Hazim<br>Email: noor.nabeel@ntu.edu.iq            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 8. Course Objectives                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Course Objectives</b>                                            | <ul style="list-style-type: none"> <li>• <b>Understanding Database Design Principles:</b> To provide students with a comprehensive understanding of database concepts, including the theoretical foundations of database systems and their practical applications.</li> <li>• <b>Developing Competence in Database Design and Implementation:</b> To provide students with the skills necessary to design, implement, and manage relational databases using industry-standard tools and techniques.</li> <li>• <b>Enhancing Problem-Solving Skills:</b> To enable students to apply database</li> </ul> |

|  |                                                                                                                                                                                                                                                                                                |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>management principles to real-world situations, including problem identification, systems analysis, and solution design.</p> <p>•Familiarization with Database Technologies:<br/>To introduce students to various database technologies and trends, including cloud database solutions.</p> |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 9. Teaching and Learning Strategies

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strategy</b> | <p>After successfully completing this course, students should be able to</p> <ul style="list-style-type: none"> <li>- Understand relational databases (RDBMS) and the concepts of tables and relationships.</li> <li>- Convert entity diagrams (ERDs) to tables in Oracle.</li> <li>- Create tables and define data types and constraints (Primary Key Foreign Key, etc.).</li> <li>- Write SQL queries (SELECT, INSERT, UPDATE, DELETE).</li> <li>- Use functions and grouping (COUNT, AVG, GROUP BY).</li> <li>- Create relationships between tables using JOIN.</li> <li>- Design a practical database project (such as a library or student administration).</li> </ul> <p>Teaching and Learning Methods</p> <p>Learning Strategies</p> <ul style="list-style-type: none"> <li>- 1. Practical Training: <ul style="list-style-type: none"> <li>- Create projects: Start with small projects, such as designing a marketplace database or a simple inventory system.</li> <li>- Use interactive tools: Platforms like Oracle APEX provide an ideal environment for practicing SQL queries and database design.</li> </ul> </li> <li>- 2. Understanding the Basics: <ul style="list-style-type: none"> <li>- Studying Data Models: Identifying different types of data models (relational, hierarchical, and object-oriented) and understanding their uses.</li> <li>- Learning SQL: Focusing on mastering SQL (Structured Query Language) as it is essential for interacting with relational database</li> </ul> </li> </ul> |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>- 3. Using Real-World Examples:</p> <p>- Analyzing Current Databases: Reviewing the design of common databases, such as those used in social media platforms or e-commerce sites, to understand practical applications.</p> <p>- Case Studies: Case studies of database management problems and solutions, to learn how to apply concepts in real-world scenarios.</p> <p>Assessment Methods:</p> <ul style="list-style-type: none"> <li>* Periodic Quizzes</li> <li>* Pop Quizzes</li> <li>* Classroom Interaction and Participation</li> <li>* Research Assignments and Reports</li> <li>* Practical and Applied Tests</li> </ul> |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 10. Course Structure

| Week | Hours | Required Learning Outcomes                                                                        | Unit or subject name                          | Learning method                    | Evaluation method                      |
|------|-------|---------------------------------------------------------------------------------------------------|-----------------------------------------------|------------------------------------|----------------------------------------|
| 1    | 4     | -Define and give example about RDBMS<br>-Identify table key terms                                 | Relational Database Management System (RDBMS) | Lectures and Discussion            | Interaction and participation          |
| 2    | 4     | -Concatenation operator<br>-Column Aliases<br>-Define and use distinct                            | Columns, Characters, and rows                 | Lectures and Discussion            | Interaction and participation          |
| 3    | 4     | -Apply the comparison operator to return a desired result<br><br>-Between, like, and in condition | Comparison operators                          | Lectures and Discussion            | Interaction, participation, and quiz   |
| 4    | 4     | -Restrict the returned rows<br>-Apply the rules of precedence                                     | Logical comparisons and precedence rules      | Lectures and Practical Application | Interaction, participation, and a Quiz |
| 5    | 4     | -Construct a                                                                                      | Sorting rows                                  | Lectures and                       | Interaction,                           |

|    |   |                                                                                                                        |                                      |                                                 |                                                        |
|----|---|------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-------------------------------------------------|--------------------------------------------------------|
|    |   | query to sort results<br>-Construct a query to sort results according to column alias                                  |                                      | Discussion                                      | Participation, and exam                                |
| 6  | 4 | -Identify appropriate applications of single-row functions<br>-Classify function as a single-row or multi-row function | Introduction to functions            | Lectures and Discussion                         | Interaction, Participation, and Report                 |
| 7  | 4 | -Selecting and applying case conversion and/or character manipulation functions                                        | Case and character manipulation      | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignment             |
| 8  | 4 | - Selecting and applying number and date functions                                                                     | -Number functions<br>-Date functions | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments            |
| 9  | 4 | -Cross join<br>-Natural join                                                                                           | Joins                                | Lectures, Discussion, and Practical Application | Presenting and Explaining Reports Through Presentation |
| 10 | 4 | -Self join<br>-Hierarchical queries                                                                                    | Joins                                | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments            |

|    |   |                                                                |                                                              |                                                 |                                                         |
|----|---|----------------------------------------------------------------|--------------------------------------------------------------|-------------------------------------------------|---------------------------------------------------------|
| 11 | 4 | Oracle equijoin and cartesian product                          | Joins                                                        | Lectures and Discussion                         | Daily Quiz                                              |
| 12 | 4 | Non equijoin and outer joins                                   | Joins                                                        | Lectures, Discussion, and Practical Application | Interaction and Participation                           |
| 13 | 4 | Define, construct, and execute SQL query using group functions | Group functions                                              | Lectures, Discussion, and Practical Application | Reports                                                 |
| 14 | 4 | -Insert data<br>-update data<br>- Create tables                | -Data Manipulation Language<br><br>-Data Definition Language | Lectures, Discussion, and Practical Application | Presenting and explaining report through a presentation |
| 15 | 4 | Projects discussion                                            | Presenting students' projects                                | Discussion                                      | Interaction and participation                           |

### 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

### 12. Learning and Teaching Resources

|                                                                    |                                                                                                                                                              |
|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any)                      |                                                                                                                                                              |
| Main references (sources)                                          | Publications on Oracle database design available in the college library and the university's central library.                                                |
| Recommended books and references (scientific journals, reports...) | Database SQL Certified Associate                                                                                                                             |
| Electronic References, Websites                                    | <a href="https://www.coursera.org/">https://www.coursera.org/</a><br><a href="https://docs.oracle.com/en/database/">https://docs.oracle.com/en/database/</a> |



(Course Description Form)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                        |                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-------------------------|
| 1-Teaching Institution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                        |                         |
| <b>Administrative Technical College / Mosul</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                        |                         |
| 2- University Department/Centre                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                        |                         |
| Northern Technical University / <b>Department of Information Technology Management/second level</b>                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                        |                         |
| 3-Course title/code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                        |                         |
| Department of Business Administration Technologies                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                        |                         |
| 4- Available forms of attendance                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                        |                         |
| IN- Person/face to face                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                        |                         |
| 5- Semester/Year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                        |                         |
| Fall semester/ 2026                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                        |                         |
| 6-Number of hours tuition (total)                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                        |                         |
| 30 hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                        |                         |
| 7- Date of production/revision of this specification                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                        |                         |
| 1/9/2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                        |                         |
| 8-(Course Objectives )General Course Objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                        |                         |
| 1 .Provide students with basic concepts related to the definition, types, and categories of crimes.<br>2 .Define the crimes and violations of the former regime and the types of international crimes.<br>3 .Define the crimes of mass graves and violations of Iraqi laws.<br>4 .Address environmental crimes, the destruction of cities, demographic change policies, and extrajudicial detention.<br>5. Explain the role of the Supreme Criminal Court in dealing with the crimes of the Ba'ath regime. |                                                                        |                         |
| 1– Course outcomes, teaching, learning and assessment methods                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                        |                         |
| Learning Outcomes (LOS)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Learning and teaching methods                                          | Evaluation methods      |
| 1The student learns about the nature of The concept of crime and types of national and international crimes.                                                                                                                                                                                                                                                                                                                                                                                               | Theoretical lectures using educational tools (PowerPoint presentations | Daily and monthly tests |

|                                                                                                                   |       |                                  |                                                                                                                                                                                         |                 |                                                                                 |  |
|-------------------------------------------------------------------------------------------------------------------|-------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------------------------------------------------------------------|--|
|                                                                                                                   |       |                                  |                                                                                                                                                                                         |                 |                                                                                 |  |
| 2-To explain the constitution, the rule of law, and human rights guarantees                                       |       |                                  | Theoretical lectures                                                                                                                                                                    |                 | management Solving exercises within the lecture and assigning external homework |  |
| 3-Developing students' ability to distinguish between crimes and human rights violations and how to confront them |       |                                  | View the companies' work and achievements                                                                                                                                               |                 | Discussions and dialogues                                                       |  |
| 2- Course steuctuer (theoretical and scientific vocabulary)                                                       |       |                                  |                                                                                                                                                                                         |                 |                                                                                 |  |
| Week                                                                                                              | Hours | Required learning outcomes       | Name of the unit/topic                                                                                                                                                                  | Teaching method | Evaluation method                                                               |  |
| First                                                                                                             | 2     | Student understanding the lesson | Crimes of the Ba regime according to the Iraqi High Criminal Court Law of 2005<br>-The concept of crimes and their types<br>- Definition of crimes in terms of language and terminology | Lecture         | Daily and monthly tests                                                         |  |
| Second                                                                                                            | 2     | Student understanding the lesson | Crimes Sections Ba'ath regime crimes, documented by Iraqi High Criminal Court Law of 2005                                                                                               | Lecture         | Daily and monthly tests                                                         |  |
| Third                                                                                                             | 2     | Student understanding the lesson | Types of International Crimes Decisions Issued by the Supreme Criminal Court                                                                                                            | Lecture         | Daily and monthly tests                                                         |  |

|            |   |                                  |                                                                                                                                                          |         |                         |
|------------|---|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------|
| fourth     | 2 | Student understanding the lesson | Psychological and social crimes and their effects<br>- Psychological crimes<br>- Mechanisms of psychological crimes<br>- Effects of psychological crimes | Lecture | Daily and monthly tests |
| Fifth      | 2 | Student understanding the lesson | Social crimes - Militarization of society<br>- The Ba'ath regime's stance on religion                                                                    | Lecture | Daily and monthly tests |
| Sixth      | 2 | Student understanding the lesson | Violations of Iraqi laws<br>- Images of human rights violations and crimes of power                                                                      | Lecture | Daily and monthly tests |
| Seventh    | 2 | Student understanding the lesson | Some decisions of the political and military violations of the Baath regime                                                                              | Lecture | Daily and monthly tests |
| The eighth | 2 | Student understanding the lesson | -Prison detention centers of the Baath regime                                                                                                            | Lecture | Daily and monthly tests |
| Ninth      | 2 | Student understanding the lesson | Environmental crimes of the Baath regime in Iraq                                                                                                         | Lecture | Daily and monthly tests |
| tenth      | 2 | Student understanding the lesson | For war pollution, radiation and nuclear explosions                                                                                                      | Lecture | Daily and monthly tests |
| Eleventh   | 2 | Student understanding the lesson | Destruction of cities and villages<br>Scorched earth policy                                                                                              | Lecture | Daily and monthly tests |
| Twelfth    | 2 | Student understanding the lesson | Draining marshes<br>Destruction of palm groves, trees, and crops                                                                                         | Lecture | Daily and monthly tests |

|            |   |                                  |                                                         |         |                         |
|------------|---|----------------------------------|---------------------------------------------------------|---------|-------------------------|
| h          |   |                                  |                                                         |         |                         |
| Thirteenth | 2 | Student understanding the lesson | Mass Grave Crimes<br>Definition of Mass Graves          | Lecture | Daily and monthly tests |
| Fourteenth | 2 | Student understanding the lesson | Mass graves & genocide committed by the Ba'ath regime   | Lecture | Daily and monthly tests |
| Fifteen    | 2 | Student understanding of lesson  | Chronological classification of genocide graves in Iraq | Lecture | Daily and monthly tests |

## 1– Curriculum development plan

### 2–Aligning learning outcomes with the National Qualifications

#### Framework:

\*Formulating clear and measurable learning outcomes.

\*Linking course outcomes to the skills and knowledge required by the labor market.

### 3– Developing teaching methods and techniques

\*Introducing active learning methods (such as problem–based learning, brainstorming, and P2 studies.

\*Using modern technology in presenting the material (such as e–

learning, educational videos, simulations.

#### **4– Enhancing students' critical and analytical thinking skills:**

##### 2– infrastructure

|                                                                          |                                                                                                                         |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Classrooms, laboratories and workshops                                   | Available                                                                                                               |
| Required books and curriculum                                            | Publications on crimes, penal law, and human rights available in the college library and the university central library |
| Main references (sources)                                                |                                                                                                                         |
| Recommended books and references<br>(Scientific journals, reports,.....) | Scientific and Applied Research Projects                                                                                |
| Electronic references and websites                                       | Human rights websites.                                                                                                  |

## Course Description Form/Organization Management

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| Educational institution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | .1 |
| Mosul Technical Administrative College                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |
| Scientific Department / Center                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | .2 |
| Information Technology Management Department/Second Stage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |    |
| Course Name/Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | .3 |
| Organization behavior/ITM211                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |
| Available attendance forms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | .4 |
| Weekly/face to face                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |    |
| semester/year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | .5 |
| Spring semester                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |    |
| Number of study hours (total)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | .6 |
| 60 hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |    |
| Date this description was prepared                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | .7 |
| 1/9/2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |    |
| Course objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | .8 |
| <p>It concerns understanding and analyzing the behavior of individuals and groups within organizations in order to improve organizational performance and effectiveness. The following is a list of typical learning objectives for this course:</p> <p><input type="checkbox"/> <b>Understanding the basic concepts of organizational behavior:</b></p> <p style="padding-left: 40px;">Definition of organizational behavior, its fields and levels (individual, group, organizational). •</p> <p style="padding-left: 40px;">Realizing the importance of studying behavior in the workplace. •</p> <p><input type="checkbox"/> <b>Analysis of individual behavior within organizations:</b></p> <p style="padding-left: 40px;">Identify the factors that influence individual behavior, such as personality, perception, attitudes, and motivation. •</p> <p><input type="checkbox"/> <b>Study group behavior and understand team dynamics:</b></p> <p style="padding-left: 40px;">Analysis of group behavior, team roles, group decision making, and intragroup conflicts. •</p> <p><input type="checkbox"/> <b>Understanding the impact of leadership and organizational culture on performance:</b></p> <p style="padding-left: 40px;">Understanding leadership theories and styles, and the impact of organizational culture on employee behavior. •</p> <p><input type="checkbox"/> <b>Understanding internal organizational processes:</b></p> |    |

Such as organizational communication, organizational change, and conflict and stress management. •

□ **Developing interpersonal skills within the workplace:**

Building effective professional relationships, working within a team, and solving behavioral problems. •

□ **Linking behavioral theories to practical application:**

Using organizational behavior models and concepts to analyze real-life situations within organizations. •

Course outcomes, teaching, learning and assessment methods .9

A-Course cognitive objectives and learning outcomes

*ChatGPT said:*

Of course, here you go. **Cognitive objectives of the organizational behavior course** In addition to **Educational learning outcomes** According to popular educational fields (especially Bloom's Taxonomy):

---

## • **First: The cognitive objectives of the organizational behavior course**

These are the goals that focus on what **The student knows and understands it.** After studying the course, it includes:

### **Knowledge: .1**

The student should mention the basic concepts of organizational behavior, such as perception, motivation, leadership, and organizational culture. ○

### **Comprehension: .2**

The student should explain the factors influencing the behavior of individuals within the work environment. ○

### **Application: .3**

To apply behavioral concepts in analyzing realistic organizational situations. ○

### **Analysis: .4**

To analyze the causes of behavioral problems within different teams or departments. ○

### **Synthesis: .5**

To integrate organizational behavior theories to provide integrated solutions to improve performance. ○

### **Evaluation: .6**

To evaluate the impact of leadership, communication or motivational styles on ○

teamwork efficiency.

## □ Second: Student Learning Outcomes

Learning outcomes describe what the student will be able to do.**his performance or achievement**After completing the course, it includes:

### • On the cognitive level:

- Identifies the main concepts and theories of organizational behavior. •
- Explains the relationship between individual behavior and group behavior within an organization. •
- Analyzes behavioral problems in the workplace and suggests appropriate solutions. •
- Compares different leadership and motivation models and their impact on employees. •

### • Skill-Based:

- Applies analytical skills to interpret employee behavior. •
- Designs organizational approaches to resolve conflicts or improve communication. •

### • On the affective level:

- Shows respect for diversity in work environments. •
- Committed to work ethics and human relations within the organization. •
- Appreciates the importance of positive relationships between individuals and groups within the organization. •

## ▫ Teaching and learning methods

### 1. □ Interactive Lectures:

- Presenting concepts and theories in an interactive manner with real-life examples. •
- Use of PowerPoint presentations and multimedia. •

### 2. □ Class Discussions:

- Encourage students to exchange views on behavioral issues such as leadership or motivation. •
- Discussing everyday situations within work environments. •

### 3. □ Case Studies:

- Analyze real or hypothetical cases related to organizational and behavioral problems. •



Develop critical thinking and problem-solving skills. •

#### 4. □ Cooperative learning and group work:

Divide students into small groups to analyze a situation or prepare a group presentation. •

Enhance communication and teamwork skills. •

#### 5. □ Role Play & Simulations:

Performing job roles such as manager or employee in organizational situations. •

A deeper understanding of individual and group behavior through direct experience. •

#### 6. □ Brainstorming:

Generating ideas to solve behavioral problems in organizations. •

Promoting creativity and innovation in dealing with human behavior. •

#### 7. □ Self-Learning:

Assign students to read scholarly articles or prepare individual reports. •

Use educational platforms or relevant videos. •

#### 8. □ Problem-Based Learning (PBL):

Present a real-life organizational problem, ask for it to be analyzed, and propose solutions from a behavioral perspective. •

Course structure .10

| Evaluation method | Teaching method | Topic name                                                                            | Learning outcomes Required          | watch es | week          |
|-------------------|-----------------|---------------------------------------------------------------------------------------|-------------------------------------|----------|---------------|
| Tests and reports | theoretical     | What is human behavior? Types of human behavior/Objectives of studying human behavior | Knowledge and practical application | 3        | the first     |
| Tests and reports | My theory       | The concept of organizational                                                         | Knowledge and practical             | 3        | the secondThe |

|                   |           |                                                                                                                                                                                                           |                                     |   |                   |
|-------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|---|-------------------|
|                   |           | behavior / the importance of studying organizational behavior / characteristics, levels and determinants of organizational behavior and the relationship of organizational behavior to other sciences     | application                         |   | third             |
| Tests and reports | My theory | The concept of perception, types of perception, characteristics of the perception process, factors affecting perception / obstacles to perception, the importance of the perception process in management | Knowledge and practical application | 3 | Fourth and fifth  |
| Tests and reports | My theory | Trends and values.<br>The concept of trends.<br>Characteristics of trends, elements of                                                                                                                    | Knowledge and practical application | 3 | Sixth and seventh |

|                                                                                  |           |                                                                                                                                                                                                                                                |                                           |   |                                                      |
|----------------------------------------------------------------------------------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|---|------------------------------------------------------|
|                                                                                  |           | trends,<br>components of<br>trends, and<br>functions of<br>trends. Changing<br>trends.                                                                                                                                                         |                                           |   |                                                      |
| Tests and<br>reports                                                             | My theory | The concept of<br>values, the<br>formation of<br>values, the<br>characteristics of<br>values, the types of<br>values, the sources<br>of values, the<br>impact of values<br>on organizational<br>behavior, values<br>and individual<br>behavior | Knowledge<br>and practical<br>application | 3 | The<br>eighthThe<br>ninth                            |
| Tests and<br>reports                                                             | My theory | Personality/concep<br>t, factors affecting<br>personality,<br>personality views                                                                                                                                                                | Knowledge<br>and practical<br>application | 3 | tenth,<br>eleventh<br>and twelfth                    |
| Tests and<br>reports                                                             | My theory | Personality<br>dimensions,<br>personality<br>characteristics                                                                                                                                                                                   | Knowledge<br>and practical<br>application | 3 | The<br>thirteenth,<br>fourteenth<br>and<br>fifteenth |
| infrastructure .11                                                               |           |                                                                                                                                                                                                                                                |                                           |   |                                                      |
|                                                                                  |           |                                                                                                                                                                                                                                                | 1- Required textbooks                     |   |                                                      |
| □ <b>Mohamed Fawzy Awad</b> – <i>Introduction<br/>to Organizational Behavior</i> |           |                                                                                                                                                                                                                                                | 2- Main references (sources)              |   |                                                      |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| <p><b>Dr. Mohamed Mustafa Abu Bakr –</b><br/> <i>Organizational Behavior - An Integrated Approach</i></p> <p>Covers individual, group, and organizational behavior extensively.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                          |
| Scientific journals in the fields of information technology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | A- Recommended books and references (scientific journals, reports, etc.) |
| Specialized websites                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | B - Electronic references, websites...                                   |
| Curriculum Development Plan .12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                          |
| <p>- Meeting with the faculty at the end of each semester to review the curricula and how to develop them, add new lessons to the current curricula, record the course content in the curriculum form annually, and propose any changes or amendments to the curricula for approval by the College Council and subsequently by the University Council, in accordance with university directives. The curricula are also published and documented on the college website, and lectures are uploaded electronically to the website.</p> <p>Providing the college library with modern scientific books from well-known international publishing houses, which enhance the vocabulary of the lessons given to the college.</p> |                                                                          |

## Course Description Form – Visual Programming(2026)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Educational Institution:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Technical Administrative College / Mosul                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 2. Department / Level:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Information Technology Management Department / Second level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 3. Course Name / Code:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Visual Basic/ITM210                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. Attendance Mode:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Weekly/face to face                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. Semester / Academic Year:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Spring Semester /2026                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 6. Total Course Hours:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 60 hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 7. Date of Course Description Preparation:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 1/9/2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 8. Course Objectives:<br><br>This course aims to teach the fundamentals of programming, problem-solving algorithms, and their translation into structured procedural programming using C#. It enables students to:<br><br>Firstly:<br><br>Understand basic programming concepts including computer programs, algorithms, operating systems, compilers, encoding formats, and programming languages. Students are introduced to the .NET development environment and C# fundamentals, focusing on core commands like input/output, assignment, arithmetic expressions, conditional statements, loops, strings, tables, and arrays.<br><br>Secondly:<br><br>Practice basic and applied algorithms and C# programming through general classical examples, solved and unsolved problems, training exercises, and practical activities. |

## 9. Course Outcomes, Teaching, Learning, and Assessment Methods

### Cognitive Objectives:

- A1: Provide comprehensive knowledge of C# programming fundamentals.
- A2: Understand Microsoft .NET concepts, the .NET Framework, and C# beginner level.
- A3: Master general syntax and constructs in C#, including blocks, variable scope, assignment, conditionals, while loops, and the five essential algorithmic operations in C#

### B. Practical and Skill-Based Objectives:

- B1: Master control statements derived from core syntax, various loop types, breaking structured flow, and branching including the use of continue in C#
- B2: Understand and apply complex data types, string types, tables, and arrays (including multidimensional and dynamic arrays).
- B3: Understand and master the structure of C# code, functions/methods, declaration, invocation, parameter passing, return values, class variables, and method parameters.

### Teaching and Learning Methods:

- Present course material and applications using computer, LCD projector, and interactive whiteboard.
- Deliver the instructional content using PowerPoint presentations.
- Conduct live teaching sessions via Google Meet.

### Assessment Methods:

To achieve the intended learning outcomes, the course applies Brainstorming techniques Cooperative learning Problem-solving Individual and group discussions Self-directed learning Additionally, assessments include Daily or semester exams Individual and group activities to promote collaborative learning

### C. Affective and Value-Based Objectives:

- C1: Student engagement with the subject
- C2: Interest and emotional connection to the subject
- C3: Motivation toward self-development
- C4: Continuous practice and application of course content

- Assessment Tools:

- Semester and final exams, quizzes, assignments

**D. Transferable and Employability Skills:**

- D1: Improve computer and communication skills
- D2: Develop independent learning skills
- D3: Ability to transfer knowledge to others
- D4: Handle practical challenges in real work environments

## 10. Course Structure

| Assessment Method        | Teaching Method   | Unit / Topic                          | Learning Outcome     | Hours | Week(s)  |
|--------------------------|-------------------|---------------------------------------|----------------------|-------|----------|
| Tests and practical work | Theory + Practice | Fundamentals of C#                    | Knowledge & Practice | 4     | Week 1–2 |
| Tests and practical work | Theory + Practice | Commands in C#                        | Knowledge & Practice | 4     | Week 3–4 |
| Tests and practical work | Theory + Practice | Additional algorithm syntax           | Knowledge & Practice | 4     | Week 5–6 |
| Tests and practical work | Theory + Practice | Data structures (composite types)     | Knowledge & Practice | 4     | Week 7–8 |
| Tests and practical work | Theory + Practice | Introduction to Functions and Methods | Knowledge & Practice | 4     | Week 9   |
| Tests and practical work | Theory + Practice | Exercises and problem solving         | Knowledge & Practice | 4     | Week 10  |

|                                                                      |                                         |
|----------------------------------------------------------------------|-----------------------------------------|
| <b>1. Required Textbooks:</b>                                        | <b>Available at the college library</b> |
| <b>2. Main References (Sources):</b>                                 | <b>Available at the college library</b> |
| <b>3. Recommended Readings (Scientific Journals, Reports, etc.):</b> |                                         |
| <b>4. Online Resources:</b>                                          | <b>Internet resources</b>               |

11. Course Development Plan:

- Develop curricula aligned with labor market needs
- Organize scientific seminars and conferences to update the curriculum
- Follow scientific developments in the field of specialization



## Course Description Form 2026 (Computer)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Educational Institution: Technical Administrative College/ Mosul                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 2. Scientific Department/Center: Information Technology Management Department / Second level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 3. Course Name/Code: Computer/NTU 201                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 4. Available attendance forms: Weekly/face to face                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 5. Semester/Year: Spring semester/2026 Bologna Pathway                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 6. Number of study hours (total): 30 hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 7. Date of preparation of this description: 1/9/2025 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <p>8. Course objectives:</p> <p>This course aims to provide students with basic knowledge in the use of computers and their various applications in academic and practical fields, while developing logical thinking and problem-solving skills using modern software and technical tools. It also seeks to equip students with the ability to employ computers in scientific research and prepare reports and presentations, enhancing digital proficiency and employability..</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <p>9. Course outcomes, teaching, learning and assessment methods</p> <p><b>A- Cognitive objectives:</b></p> <ul style="list-style-type: none"> <li>The student is able to understand the basics of computers.</li> <li>Using models in daily life</li> <li>Enabling the student to know how to apply the material in practical life</li> <li>It involves realizing the relationship or relationships contained in the Data, interpretation of relationships and their components, interpretation of figures and graphs, interpretation of tables Statistics</li> </ul> <p><b>B - Course specific skill objectives.</b></p> <ul style="list-style-type: none"> <li>Proficiency in using word processing, spreadsheets, and presentation programs.</li> <li>Applying online research and digital data analysis skills.</li> <li>Ability to design professional academic reports using computer tools.</li> <li>Using software to solve practical problems and small projects.</li> </ul> <p><b>C- Emotional and value-based goals</b></p> <ul style="list-style-type: none"> <li>Enhancing the value of teamwork through collaborative projects using digital tools.</li> <li>Instilling the importance of adhering to the ethics of using technology and protecting intellectual property.</li> <li>Developing a sense of responsibility towards cybersecurity and personal data.</li> </ul> <p><b>D - General and transferable skills (other skills related to employability and personal development).</b></p> <ul style="list-style-type: none"> <li>Developing digital communication skills and preparing electronic reports.</li> <li>Enhance the ability to engage in continuous self-learning using Internet resources.</li> <li>Providing students with the digital proficiency required for the labor market.</li> <li>Develop planning and organizing skills using supporting software.</li> </ul> <p><b>e. Teaching and learning methods</b></p> <ul style="list-style-type: none"> <li>- Theoretical lectures supported by presentations.</li> <li>- Practical applications in computer laboratories.</li> <li>- Cooperative learning and problem solving in groups.</li> <li>- Self-learning via electronic platforms and internet resources.</li> </ul> <p><b>Evaluation methods</b></p> <ul style="list-style-type: none"> <li>Theoretical exams (midterm and final).</li> </ul> |

- Practical assessment through laboratory tests.
- Individual and group assignments and projects.
- Classroom participation and interactive activities.

#### 10. Theoretical structure of the course

| week       | watches | Required learning outcomes          | Unit name/topic                                 | Teaching method                    | Evaluation method                |
|------------|---------|-------------------------------------|-------------------------------------------------|------------------------------------|----------------------------------|
| the first  | 2       | Student understanding of the lesson | programPOWER POINT                              | Theoretical lecture + presentation | Short quiz + class participation |
| the second | 2       | Student understanding of the lesson | Components of the main interface of the program | Interactive lecture + discussion   | Written assignment + short test  |
| the third  | 2       | Student understanding of the lesson | Information about the presentation              | Lecture + lab demonstration        | Short practical test             |
| Fourth     | 2       | Student understanding of the lesson | Tabs                                            | Lecture + practical lab            | Practical report + test          |
| Fifth      | 2       | Student understanding of the lesson | Insert slides                                   | Lecture + Presentation             | Application duty                 |
| Sixth      | 2       | Student understanding of the lesson | Presentation Views                              | Lecture + exercises                | Short test                       |
| Seventh    | 2       | Student understanding of the lesson | PowerPoint keyboard shortcuts                   | Lecture + Case Study               | Application duty                 |
| The eighth | 2       | Student understanding of the lesson | Exams                                           | Lecture + Discussion               | Short quiz + sharing             |
| Ninth      | 2       | Student understanding of the lesson | Internet                                        | Lecture + explanatory video        | Short research assignment        |
| tenth      | 2       | Student understanding of the lesson | e-mail                                          | Lecture + practical activity       | Short test                       |
| eleventh   | 2       | Student understanding of the lesson | Excel concept                                   | Lecture + practical lab            | practical control                |
| twelfth    | 2       | Student understanding of the lesson | Open and create a file                          | Lecture + practical application    | Laboratory report                |
| thirteenth | 2       | Student understanding of the lesson | Insert data, rows and columns                   | Practical lab                      | practical control                |
| fourteenth | 2       | Student understanding of the lesson | Organizational structure of operations          | Practical lab                      | Homework + Test                  |
| fifteenth  | 2       |                                     | semester exam                                   | Discussion + Presentations         | Project presentation +           |

|           |  |  |  |                    |                      |
|-----------|--|--|--|--------------------|----------------------|
|           |  |  |  |                    | practical evaluation |
| sixteenth |  |  |  | Comprehensive exam | Final exam           |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>11.infrastructure</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                   |
| 1- Required textbooks                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Computer Fundamentals and its Applications, Ziad Mohammed Abboud et al., 2014.                                    |
| 2- Main references (sources)                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Computer Fundamentals and its Applications, Ziad Mohammed Abboud et al., 2014.                                    |
| A- Recommended books and references (scientific journals, reports)                                                                                                                                                                                                                                                                                                                                                                                                                  | <a href="#">Kevin Hare</a> . (2022). Computer Science Principles<br>The Foundational Concepts of Computer Science |
| B - Electronic references, websites...                                                                                                                                                                                                                                                                                                                                                                                                                                              | Computer basics websites                                                                                          |
| <b>12. Curriculum Development Plan</b>                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                   |
| The course content is updated periodically to keep pace with recent technological developments, introducing new topics such as information security and cloud computing. The practical side is also enhanced by adding applications for multiple operating systems and modern programming languages. E-learning and applied projects are also enhanced, linking the course to labor market requirements, and are periodically reviewed based on feedback from students and faculty. |                                                                                                                   |

## New Course Description Form / Multimedia

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Educational institution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Mosul Technical Administrative College                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. Scientific Department / Center                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Information Technology Management Department/Second Level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 3. Course Name/Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Multimedia/ITM213                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. Available attendance forms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Weekly/Face to Face                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 5. semester/year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Spring semester/2026                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 6. Number of study hours (total)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 60 hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 7. Date this description was prepared                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 1/9/2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 8. Course objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>-Providing students with basic conceptswith multimedia applications.</li> <li>-Knowing the different types of systems that serve the levelsTechnical.</li> <li>-Learn the mechanism of analysis and designVideos, texts, audio, and graphics.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 9. Course outcomes, teaching, learning and assessment methods                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <p style="text-align: center;"><b>A- Cognitive objectives</b></p> <ul style="list-style-type: none"> <li>- Understanding and Analyzing Multimedia: Students will be able to understand the basic components of multimedia and identify their vital role in supporting organizational decision-making. This includes the ability to analyze existing systems, identify their strengths and weaknesses, and suggest improvements to increase efficiency and effectiveness.</li> <li>- Applying Technological Concepts: Students will acquire the ability to connect the theoretical concepts of administrative multimedia with contemporary technological applications. This includes understanding modern technologies such as Google's digital applications and Canva applications, and how they can be employed to achieve organizational</li> </ul> |

strategic goals.

B - Course specific skill objectives.

- Problem solving skills using the Internet: The student will develop the ability to identify organizational problems that can be solved or mitigated using information systems, and to propose innovative technology-based solutions, with a focus on operational efficiency and improved decision-making.
- Systems analysis and design skills: The student will acquire the ability to analyze the functional and non-functional requirements of a new information system, and design appropriate solutions using systems modeling tools and techniques such as data flow diagrams (DFD) and entity-relationship diagrams (ERD), which qualifies him to be an effective link between business and technical teams.

Teaching and learning methods

- Direct instruction (lecture) with the use of educational technology tools
- Class discussion and interaction through assignment of homework
  - Education by practical application of subjects that require department laboratories
  - Project-based learning strategy

Evaluation methods

- \*Periodic tests
- \*Surprise tests
- \*Classroom interaction and participation
- \*Research assignments and reports
- \*Practical and applied tests

C- Emotional and value-based goals

A1- Enhancing the spirit of belonging to a team within the organization and the desire to provide the best.

A2- Enhancing the desire to compete to raise the educational level

A3- Enhancing the sense of belonging to the specialty and developing the desire to work in information institutions.

### Teaching and learning methods

1. Periodic field visits to administrative and technical institutions.
2. Coexistence, actual practice, and interaction with workers through practical application (summer training) that the student undertakes by living with the beneficiaries.
3. Psychological and emotional stimulation through open and direct discussions with students.

D - General and transferable skills (other skills related to employability and personal development).

D1- Teaching the student the skills of writing research and reports.

D2- Teaching the student how to link the theoretical aspect with the practical application that he will practice at work.

D3- Teaching the student how to deal with information sources, analyze them, and deduce and record a summary of the information he obtains as a result of the objective analysis of these sources.

D4- Teaching the student how to design databases and websites and implement programs to serve various scientific fields.

### 10. Course structure

| Evaluation method                     | Teaching method         | Unit name/topic                                  | Required learning outcomes          | watches | week       |
|---------------------------------------|-------------------------|--------------------------------------------------|-------------------------------------|---------|------------|
| Interaction and participation         | Lectures and discussion | General introduction, basic concepts             | Knowledge and practical application | 4       | the first  |
| Interaction and participation         | Lectures and discussion | <b>Multimedia production tools and equipment</b> | Knowledge and practical application | 4       | the second |
| Interact, participate and test daily. | Lectures and discussion | <b>Material components</b>                       | Knowledge and practical application | 4       | the third  |
| Interaction, engagement, and          | Lectures and practical  | Software components                              | Knowledge and practical             | 4       |            |

|                                                       |                                                |                                                     |                                     |   |            |
|-------------------------------------------------------|------------------------------------------------|-----------------------------------------------------|-------------------------------------|---|------------|
| pop-up testing                                        | application                                    |                                                     | application                         |   | Fourth     |
| Interaction, participation, and semester testing      | Lectures and discussion                        | Texts                                               | Knowledge and practical application | 4 | Fifth      |
| Interaction, Participation, and Reports               | Lectures, discussion and practical application | connections, linksTramifications                    | Knowledge and practical application | 4 | Sixth      |
| Interaction, participation, and duties                | Lectures, discussion and practical application | Art and animation                                   | Knowledge and practical application | 4 | Seventh    |
| Interaction, participation, and duties                | Lectures, discussion and practical application | Camera, pan, rotation and angle levels              | Knowledge and practical application | 4 | The eighth |
| Delivering and explaining reports throughpresentation | Lectures, discussion and practical application | Lines and decoration                                | Knowledge and practical application | 4 | Ninth      |
| Interaction, participation, and duties                | Lectures, discussion and practical application | Pictures and their types, black and white and color | Knowledge and practical application | 4 | tenth      |
| Daily test                                            | Lectures and discussion                        | Sound, its elements, tools and devices              | Knowledge and practical application | 4 | eleventh   |
| Interaction and participation                         | Lectures and discussion                        | Sound waves and their types                         | Knowledge and practical application | 4 | twelfth    |

|                                                        |                         |                                    |                                     |   |            |
|--------------------------------------------------------|-------------------------|------------------------------------|-------------------------------------|---|------------|
| Reports                                                | Lectures and discussion | Craves                             | Knowledge and practical application | 4 | thirteenth |
| Delivering and explaining reports through presentation | Practical application   | The video                          | Knowledge and practical application | 4 | fourteenth |
| Interaction and participation                          | Lectures and discussion | Digital formats and their features | Knowledge and practical application | 4 | fifteenth  |

|            |                                     |  |                    |
|------------|-------------------------------------|--|--------------------|
| Multimedia | Knowledge and practical application |  | 11. infrastructure |
|------------|-------------------------------------|--|--------------------|

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| Multimedia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1- Required textbooks                                                    |
| Private publications<br>For multimedia Available at the college library and the university's central library                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2- Main references (sources)                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | A- Recommended books and references (scientific journals, reports, etc.) |
| websites                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | B - Electronic references, websites...                                   |
| 12. Curriculum Development Plan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                          |
| <p>The development plan for this course aims to update the content by incorporating the latest developments in networking and communications technology, such as the type of multimedia, associated devices, capacity, speed, and pros and cons, to enhance students' understanding of basic concepts and their practical applications. The plan will focus on adding real-life case studies and practical exercises to train students in analyzing and solving problems using Internet installation and management software, while developing their skills. The teaching methods used will also be evaluated to ensure they align with the desired learning outcomes and provide a more interactive and engaging learning experience for students.</p> |                                                                          |



## Course Description Form – Project Management (2026)

|                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Educational Institution:                                                                                                                                                                                                                                                                              |
| Technical Administrative College / Mosul                                                                                                                                                                                                                                                                 |
| 2. Department / Level:                                                                                                                                                                                                                                                                                   |
| Information Technology Management Department / Third Year                                                                                                                                                                                                                                                |
| 3. Course Name / Code:                                                                                                                                                                                                                                                                                   |
| Project Management/ELM315                                                                                                                                                                                                                                                                                |
| 4. Attendance Mode:                                                                                                                                                                                                                                                                                      |
| Weekly/FACE TO FACE                                                                                                                                                                                                                                                                                      |
| 5. Semester / Academic Year:                                                                                                                                                                                                                                                                             |
| Fall Semester /2026                                                                                                                                                                                                                                                                                      |
| 6. Total Course Hours:                                                                                                                                                                                                                                                                                   |
| 60 hours                                                                                                                                                                                                                                                                                                 |
| 7. Date of Course Description Preparation:                                                                                                                                                                                                                                                               |
| 2026/6/30                                                                                                                                                                                                                                                                                                |
| 8. Course Objectives:                                                                                                                                                                                                                                                                                    |
| This course aims to introduce the concepts, strategies, and skills necessary for managing projects according to the methodology of the Project Management Institute (PMI). It contributes to enhancing the efficiency and effectiveness of participants in the field of professional project management. |

### 9. Course Outcomes, Teaching, Learning, and Assessment Methods

#### **Cognitive Objectives:**

- A1: Provide comprehensive knowledge on all project management topics.
- A2: Understand how to initiate projects.
- A3: Understand different project selection methods.
- A4: Understand types of contracts, contracting mechanisms, supervision, and project delivery.

**B. Practical and Skill-Based Objectives:**

- B1: Understand how to define project tasks and form work teams.
- B2: Practice scheduling and budgeting.
- B3: Practice monitoring and controlling the project.

**Teaching and Learning Methods:**

- Present course content and activities using a computer, LCD projector, and interactive whiteboard.
- Deliver learning materials through PowerPoint presentations.
- Use Google Meet for online teaching sessions.

**Assessment Methods:**

To achieve the course goals, specific evaluation methods are used such as: Brainstorming techniques Cooperative learning Problem-solving Individual and group discussions Self-directed learning Students are also evaluated through Daily or mid-term exams Individual and group activities that promote collaborative learning

**C. Affective and Value-Based Objectives:**

- C1: Student engagement with the course
- C2: Student interest and attachment to the subject
- C3: Developing self-capabilities
- C4: Continuous practice of the course content

**Assessment Tools:**

Homework, quizzes, reports, and exams

**D. Transferable and Employability Skills:**

- D1: Enhance computer and communication skills
- D2: Develop self-reliance in acquiring knowledge
- D3: Ability to share knowledge with others
- D4: Handle practical challenges in the workplace

## 10.Course Structure

| Assessment Method | Teaching Method   | Unit / Topic                                                                         | Learning Outcomes    | Hours | Week(s) |
|-------------------|-------------------|--------------------------------------------------------------------------------------|----------------------|-------|---------|
| Tests & Reports   | Theory + Practice | Project Management Framework (PMP)                                                   | Knowledge & Practice | 4     | 1       |
| Tests & Reports   | Theory + Practice | What is a project? What is project management? Domains/Context                       | Knowledge & Practice | 4     | 2       |
| Tests & Reports   | Theory + Practice | Project life cycle, stakeholders, organizational influence                           | Knowledge & Practice | 4     | 3       |
| Tests & Reports   | Theory + Practice | Project management processes                                                         | Knowledge & Practice | 4     | 4       |
| Tests & Reports   | Theory + Practice | Process interactions, project process map                                            | Knowledge & Practice | 4     | 5       |
| Tests & Reports   | Theory + Practice | Project integration management, initiating document, preliminary scope, project plan | Knowledge & Practice | 4     | 6       |
| Tests & Reports   | Theory + Practice | Execution and control, integrated control, project closure                           | Knowledge & Practice | 4     | 7       |
| Tests & Reports   | Theory + Practice | Scope management: planning & defining scope                                          | Knowledge & Practice | 4     | 8       |
| Tests & Reports   | Theory + Practice | Work Breakdown Structure (WBS), scope verification and control                       | Knowledge & Practice | 4     | 9–11    |
| Tests & Reports   | Theory + Practice | Time management: task identification & sequencing                                    | Knowledge & Practice | 4     | 12–13   |
| Tests & Reports   | Theory + Practice | Task resource & duration estimation, schedule development                            | Knowledge & Practice | 4     | 14–15   |
| Tests & Reports   | Theory + Practice | Cost management: cost estimation, budgeting, cost control                            | Knowledge & Practice | 4     | 16–18   |
| Tests & Reports   | Theory + Practice | Quality management: planning & assurance                                             | Knowledge & Practice | 4     | 19      |
| Tests & Reports   | Theory + Practice | Quality control and monitoring                                                       | Knowledge & Practice | 4     | 20–21   |
| Tests & Reports   | Theory + Practice | Human Resource Management: HR planning                                               | Knowledge & Practice | 4     | 22      |
| Tests & Reports   | Theory + Practice | Team formation, development, and management                                          | Knowledge & Practice | 4     | 23      |
| Tests & Reports   | Theory + Practice | Project communication: planning, reporting, stakeholder management                   | Knowledge & Practice | 4     | 24–25   |
| Tests & Reports   | Theory + Practice | Risk management: planning, risk identification, qualitative & quantitative analysis  | Knowledge & Practice | 4     | 26      |
| Tests & Reports   | Theory + Practice | Risk response and risk control                                                       | Knowledge & Practice | 4     | 27      |

|                 |                   |                                                                       |                      |   |       |
|-----------------|-------------------|-----------------------------------------------------------------------|----------------------|---|-------|
| Tests & Reports | Theory + Practice | Procurement & contracting: planning, proposals, selection, management | Knowledge & Practice | 4 | 28–29 |
|-----------------|-------------------|-----------------------------------------------------------------------|----------------------|---|-------|

## 11. Infrastructure

### 1. Required Textbooks:

Available in the Free Education Repository and the College Library

### 2. Main References (Sources)

Available in the Free Education Repository and the College Library

### 3. Recommended Materials (Journals, Reports, etc.):

### 4. Online References:

Internet resources

## 12. Course Development Plan:

- Develop curricula aligned with job market needs
- Organize scientific seminars and conferences aimed at updating the curriculum
- Track scientific advancements in the field of specialization

## Course Description Form / Knowledge management

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Educational institution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Mosul Technical Administrative College                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2. Scientific Department / Center                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Information Technology Management Department/ third stage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. Course Name / Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Knowledge management / ELM317                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 4. Available attendance forms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Weekly/face to face                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. semester/year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Level 3/Spring Semester/2026                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 6. Number of study hours (total)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 45 hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 7. Date this description was prepared                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1/9/2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 8. Course objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| An attempt to enrich students with a set of concepts and theories that include many implications and connotations, while clarifying the differences between these theories.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 9. Course outcomes, teaching, learning and assessment methods                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <p><b>A- Cognitive objectives</b></p> <ul style="list-style-type: none"> <li>- Enabling students to understand complex concepts by providing multiple sources of information.</li> <li>- Developing cognitive aspects related to knowledge management.</li> <li>- Providing a knowledge presentation on critical thinking.</li> </ul> <p><b>B- Course skill objectives.</b></p> <ol style="list-style-type: none"> <li>1. Encourage self-directed learning to enhance students' ability to independently search for knowledge and utilize available resources.</li> <li>2. Promote collaboration through teamwork and knowledge sharing among students to enhance shared learning.</li> <li>3. Facilitate access to information and provide tools and platforms that facilitate access to relevant knowledge and information.</li> </ol> |

**Learning outcomes:** By the end of this course, students are expected to be able to explain the basic concepts of knowledge management.

Learning outcomes for the Knowledge Management course include:

1. Understanding basic concepts, i.e., the student's ability to explain the basic concepts of knowledge management and their importance in organizations.
2. The ability to apply knowledge management strategies and models in different contexts.
3. Data and information analysis skills to identify opportunities and challenges in knowledge management.
4. Developing knowledge management systems and the ability to design and develop systems and tools that facilitate knowledge management within organizations.
5. Evaluating performance and the ability to assess the effectiveness of knowledge management strategies through clear performance indicators.
6. Effective communication and communication skills to clearly convey knowledge and ideas between individuals and teams.
7. Encouraging innovation and the ability to use knowledge to enhance innovation and develop new solutions to problems.
8. Teamwork and skills to work within multidisciplinary teams to promote knowledge sharing and best practices.

These outcomes help students develop their skills and knowledge in the field of knowledge management.

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### Teaching and learning methods

- Theoretical lectures.
  - Presentations by students.
  - Case studies.
  - Group discussion and practical workshops.
  - Individual or group projects.
  - Problem-based learning (PBL).
  - Use simulations or management games if available.
- 

### 10. Course structure

| Evaluation method | Teaching method | Topic name                                                                    | Required learning outcomes          | Hours | week           |
|-------------------|-----------------|-------------------------------------------------------------------------------|-------------------------------------|-------|----------------|
| Tests and reports | Theoretical     | The emergence and development of knowledge                                    | Knowledge and practical application | 3     | first          |
| Tests and reports | Theoretical     | The concept of knowledge and the relationships between data, information, and | Knowledge and practical application | 3     | second & third |

|                          |                    |                                                                                                                                                                                                                                      |                                            |          |                                               |
|--------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------|-----------------------------------------------|
|                          |                    | <b>knowledge</b>                                                                                                                                                                                                                     |                                            |          |                                               |
| <b>Tests and reports</b> | <b>Theoretical</b> | <b>The importance of knowledge, characteristics of knowledge, and objectives of knowledge</b>                                                                                                                                        | <b>Knowledge and practical application</b> | <b>3</b> | <b>Fourth &amp; fifth</b>                     |
| <b>Tests and reports</b> | <b>Theoretical</b> | <b>Sources of knowledge, knowledge pyramid, and types of knowledge</b>                                                                                                                                                               | <b>Knowledge and practical application</b> | <b>3</b> | <b>Sixth &amp; seventh</b>                    |
| <b>Tests and reports</b> | <b>Theoretical</b> | <b>What is knowledge management, the concept of knowledge management, and the knowledge management life cycle?</b>                                                                                                                   | <b>Knowledge and practical application</b> | <b>3</b> | <b>Eighth &amp; ninth</b>                     |
| <b>Tests and reports</b> | <b>Theoretical</b> | <b>The importance of knowledge management, the objectives of knowledge management, the dimensions of knowledge management, and the elements of knowledge management, along with the axes and approaches to knowledge management.</b> | <b>Knowledge and practical application</b> | <b>3</b> | <b>tenth, eleventh &amp; twelfth</b>          |
| <b>Tests and reports</b> | <b>Theoretical</b> | <b>The relationship between information</b>                                                                                                                                                                                          | <b>Knowledge and practical</b>             | <b>3</b> | <b>thirteenth, fourteenth &amp; fifteenth</b> |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                                                                                                                                                                                                                                                            |                                                                                                                                                                                                      |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | <b>management and knowledge management, the relationship between knowledge management and knowledge management systems, knowledge mapping, knowledge management processes, knowledge management requirements, and knowledge management success factors</b> | <b>application</b>                                                                                                                                                                                   |  |  |
| 11. Infrastructure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                                            |                                                                                                                                                                                                      |  |  |
| 1- Required textbooks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                                                                                                                                                                                                                                                            |                                                                                                                                                                                                      |  |  |
| 2- Main references (sources)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                                                                                                                                                                            | Knowledge Management - Knowledge Management Basics<br>Author: Mr. Sayed El-Nashar<br>Knowledge Management - Introduction to Knowledge Management<br>Author: Prof. Dr. Abdul Sattar Al-Ali and others |  |  |
| A- Recommended books and references (scientific journals, reports, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                                                                                                                                                                                                                                                            | Scientific journals in the fields of information technology                                                                                                                                          |  |  |
| B - Electronic references, websites...                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                            | Specialized websites                                                                                                                                                                                 |  |  |
| 12. Curriculum Development Plan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                                                                                                                                                                                                                                                            |                                                                                                                                                                                                      |  |  |
| - Meeting with the faculty at the end of each semester to review the curricula and how to develop them, add new lessons to the current curricula, record the course content in the curriculum form annually, and propose any changes or amendments to the curricula for approval by the College Council and subsequently by the University Council, in accordance with university directives. The curricula are also published and documented on the college website, and lectures are uploaded electronically to the website. |  |                                                                                                                                                                                                                                                            |                                                                                                                                                                                                      |  |  |



- Providing the college library with modern scientific books from well-known international publishing houses, which enhance the vocabulary of the lessons given to the college.

## Course Description Form

|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Database Administration                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 2. Course Code:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| ELM305                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 3. Semester / Year:                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Fall Semester /2026                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Description Preparation Date:                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 1/9/2025                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 5. Available Attendance Forms:                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Face to Face/In-person                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 6. Number of Credit Hours (Total) / Number of Units (Total)         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 75 hours                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 7. Course administrator's name (mention all, if more than one name) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Name: Noor Nabeel Hazim<br>Email: noor.nabeel@ntu.edu.iq            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 8. Course Objectives                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Course Objectives</b>                                            | <ul style="list-style-type: none"> <li>• <b>Understanding Database Management Principles:</b> To provide students with a comprehensive understanding of database concepts, including the theoretical foundations of database systems and their practical applications.</li> <li>• <b>Developing competency in database design and implementation:</b> To provide students with the skills necessary to design, implement, and manage relational databases using industry-standard tools and techniques.</li> <li>• <b>Enhancing problem-solving skills:</b> To</li> </ul> |

|                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                            | <p>enable students to apply database management principles to real-world situations, including problem identification, systems analysis, and solution design.</p> <ul style="list-style-type: none"> <li>• Familiarization with database technologies: To introduce students to various database technologies and trends including cloud database solutions.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <p>9. Teaching and Learning Strategies</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <p><b>Strategy</b></p>                     | <p>After successfully completing this course, students should be able to:</p> <ol style="list-style-type: none"> <li>1. Install, create, and manage an Oracle database</li> <li>2. Configure the database for an application</li> <li>3. Use basic monitoring procedures</li> <li>4. Implement a backup and recovery strategy</li> <li>5. Move data between databases and files</li> </ol> <p>Teaching and Learning Methods</p> <p>Learning Strategies</p> <ul style="list-style-type: none"> <li>- 1. Practical Training:</li> <li>- Creating Projects: Start with small projects, such as designing a personal contact database or a simple inventory system.</li> <li>- Using Interactive Tools: Platforms like SQLFiddle, DB Fiddle, and others provide an ideal environment for practicing SQL queries and database design.</li> <li>- 2. Understanding the Fundamentals:</li> <li>- Studying Data Models: Learn about different types of data models (relational, hierarchical, and object-oriented) and understand their uses.</li> <li>- Learning SQL: Focus on mastering SQL (Structured Query Language) as it is essential for interacting with relational databases.</li> <li>3. Use Real-World Examples:</li> <li>- Analyze Current Databases: Review the design of</li> </ul> |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>popular databases, such as those used in social media platforms or e-commerce websites, to understand practical applications.</p> <ul style="list-style-type: none"> <li>- Case Studies: Study case studies of database management problems and solutions to learn how concepts are applied in real-world scenarios.</li> </ul> <p>- 4. Join Study Groups:</p> <ul style="list-style-type: none"> <li>- Collaboration: Working with others can help clarify concepts and offer different perspectives.</li> <li>- Discussions: Participate in discussions or forums (such as Stack Overflow or Reddit) to resolve your doubts and learn from others' experiences.</li> </ul> <p>- 5. Apply Theoretical Knowledge Practical:</p> <ul style="list-style-type: none"> <li>- Simulate Database Scenarios: Use tools to simulate real-world database scenarios and solve problems.</li> <li>- Optimize Queries: Practice optimizing queries to improve performance.</li> </ul> <p>Teaching Strategies</p> <p>1. Use Real-World Applications:</p> <p>Project-Based Learning: Design assignments and projects based on real-world scenarios that students might encounter in work settings.</p> <p>Case Studies: Incorporate case studies to illustrate how database management concepts are applied in various industries.</p> <p>2. Interactive Teaching Methods:</p> <p>Live Programming Sessions: Apply concepts through live programming to demonstrate how to execute queries, design databases, and troubleshoot problems.</p> <p>3. Gradual Learning Approach:</p> |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Start with the Basics: Ensure basic concepts are well understood before moving on to advanced topics.</p> <p>Build Complexity: Gradually introduce more complex topics and problems as students deepen their understanding.</p> <p>4. Encourage Collaboration and Discussion:</p> <p>Group Work: Facilitate group projects where students can work together on database design and management tasks.</p> <p>Peer Review: Implement peer review sessions where students critique and improve each other's work.</p> <p>5. Use of Diverse Resources: Use videos, graphs, and interactive charts to explain complex concepts.</p> <p>6. Integrate Technology:</p> <p>Database Administration Tools: Introduce students to various database administration tools and platforms (such as MySQL, PostgreSQL, and MongoDB) to give them an opportunity to become familiar with different technologies.</p> <p>Assessment Methods</p> <ul style="list-style-type: none"> <li>*Periodic Tests</li> <li>*Surprise Tests</li> <li>*Classroom Interaction and Participation</li> <li>*Research Assignments and Reports</li> <li>*Practical and Applied Tests</li> </ul> |
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## 10. Course Structure

| Week | Hours | Required Learning Outcomes | Unit or subject name | Learning method | Evaluation method |
|------|-------|----------------------------|----------------------|-----------------|-------------------|
|------|-------|----------------------------|----------------------|-----------------|-------------------|

|    |   |                                                                                                                                                                                                             |                                            |                                                 |                                                        |
|----|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-------------------------------------------------|--------------------------------------------------------|
| 1  | 4 | Oracle database Architecture                                                                                                                                                                                | Exploring the Oracle Database Architecture | Lectures and Discussion                         | Interaction and participation                          |
| 2  | 4 | Be familiar with the memory structures (SGA components)                                                                                                                                                     | Exploring the Oracle Database Architecture | Lectures and Discussion                         | Interaction and participation                          |
| 3  | 4 | Be familiar with:<br>1-the memory structures (SGA)components)<br>2-Private Global Area                                                                                                                      | Exploring the Oracle Database Architecture | Lectures and Discussion                         | Interaction, participation, and daily testing          |
| 4  | 4 | Be familiar with the Process Architecture                                                                                                                                                                   | Exploring the Oracle Database Architecture | Lectures and Practical Application              | Interact and Participate, and a Surprise Quiz          |
| 5  | 4 | Be familiar with the Process Architecture2                                                                                                                                                                  | Exploring the Oracle Database Architecture | Lectures and Discussion                         | Interaction, Participation, and Quarterly Quiz         |
| 6  | 4 | Be familiar with Logical and Physical Database Structure                                                                                                                                                    | Exploring the Oracle Database Architecture | Lectures and Discussion                         | Interaction, Participation, and Report                 |
| 7  | 4 | physical implementation                                                                                                                                                                                     | Planning the Database                      | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments            |
| 8  | 4 | •Delete a Database<br>•Using the DBCA for Additional Tasks                                                                                                                                                  | Oracle Database Using DBCA                 | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments            |
| 9  | 4 | • Start and stop the Oracle database and components<br>-Use Oracle Enterprise Manager<br>•Access a database with SQL*Plus<br>-Initialization Parameter Files<br>• Modify database initialization parameters | Managing the Database Instance             | Lectures, Discussion, and Practical Application | Presenting and Explaining Reports Through Presentation |
| 10 | 4 | •Changing initialization parameter values                                                                                                                                                                   | Managing the Database                      | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignment             |

|    |   |                                                                                                                                                                                                                                                                                                                                                              |                                        |                                                 |                                                          |
|----|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-------------------------------------------------|----------------------------------------------------------|
|    |   | <ul style="list-style-type: none"> <li>•Describe database shutdown options</li> <li>•View the alert log</li> </ul>                                                                                                                                                                                                                                           | Instance                               |                                                 |                                                          |
| 11 | 4 | <ul style="list-style-type: none"> <li>•Access dynamic performance views</li> <li>•Access Data dictionary</li> </ul>                                                                                                                                                                                                                                         | Managing the Database Instance         | Lectures, Discussion, and Practical Application | Daily Quiz                                               |
| 12 | 4 | <ul style="list-style-type: none"> <li>• Describe the storage of table row data in blocks</li> <li>• Create and manage tablespaces</li> <li>• Obtain tablespace information</li> </ul>                                                                                                                                                                       | Managing the Database Instance         | Lectures, Discussion, and Practical Application | Interaction and Participation                            |
| 13 | 4 | <ul style="list-style-type: none"> <li>-Create and manage database user accounts: <ul style="list-style-type: none"> <li>– Authenticate users</li> <li>– Assign default storage areas (tablespaces)</li> </ul> </li> <li>• Grant and revoke privileges</li> <li>• Create and manage roles</li> <li>• Create and manage profiles</li> <li>• Backup</li> </ul> | Administering User Security and Backup | Lectures, Discussion, and Practical Application | Interaction And Participation                            |
| 14 | 4 | Export and import databases among different RDBMs                                                                                                                                                                                                                                                                                                            | SQL Loader                             | Lectures, Discussion, and Practical Application | Interaction And Participation                            |
| 15 | 4 | Students' projects discussion                                                                                                                                                                                                                                                                                                                                | Students' projects discussion          | Lectures, Discussion, and Practical Application | Presenting and explaining reports through a presentation |

## 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

## 12. Learning and Teaching Resources

Required textbooks (curricular books, if any)

|                                                                    |                                                                                                                       |
|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Main references (sources)                                          | Publications on Oracle database administration available in the college library and the university's central library. |
| Recommended books and references (scientific journals, reports...) | Brian Peasland, Oracle DBA Mentor: Succeeding as an Oracle Database Administrator                                     |
| Electronic References, Websites                                    | <a href="https://www.coursera.org/">https://www.coursera.org/</a>                                                     |



## Course Description Form/ Financial management

|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Financial management                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 2. Course Code:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| ELM303                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 3. Semester / Year:                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Fall Semester /2026                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Description Preparation Date:                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 1/9/2025                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 5. Available Attendance Forms:                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Weekly / In-person                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 6. Number of Credit Hours (Total) / Number of Units (Total)         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 60 hours                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 7. Course administrator's name (mention all, if more than one name) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Name: Zahida Ali Yassin<br>Email:zahidaay@ntu.edu.iq                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 8. Course Objectives                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Course Objectives</b>                                            | <p><b>Understanding Financial Concepts:</b> Equip students with the ability to understand and interpret concepts of financial management and recognize their importance in a business context.</p> <ul style="list-style-type: none"> <li>• <b>Financial Data Analysis:</b> Enable students to analyze financial data, extract key information from financial statements, and assess the financial performance of companies.</li> <li>• <b>Strategic Financial Decision-Making:</b> Provide students with the ability to make sound and strategic financial decisions based on financial analysis, forecasts, and economic factors.</li> <li>• <b>Budgeting and Financial Planning:</b> Help students acquire the necessary skills to create budgets, engage in financial planning, and manage financial resources effectively and sustainably.</li> </ul> |
| 9. Teaching and Learning Strategies                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strategy</b> | <p style="text-align: center;"><b>A. Cognitive Objectives</b></p> <p>Understand concepts such as the time value of money, risk and return, and financial statement analysis.</p> <ul style="list-style-type: none"> <li>– Be able to read and understand various financial statements (balance sheet, income statement, cash flow statement).</li> <li>– Understand different sources of financing and their costs, and how to make optimal financing decisions. <ul style="list-style-type: none"> <li>– Understand personal and business financial planning methods, including budget</li> </ul> </li> </ul> <p style="text-align: center;"><b>B. Course Skill Objectives</b></p> <ul style="list-style-type: none"> <li>– The ability to analyze financial data and use it in decision-making.</li> <li>– Proficiency in using accounting and financial software, such as Excel and other financial software.</li> <li>– The ability to present financial ideas clearly and convincingly to colleagues and management. <ul style="list-style-type: none"> <li>– Develop critical thinking skills to solve complex financial problems.</li> </ul> </li> </ul> <p style="text-align: center;"><b>Teaching and Learning Methods</b></p> <ul style="list-style-type: none"> <li>- Direct instruction (lectures) using educational technology tools</li> <li>- Classroom discussion and interaction through assignments</li> <li>- Learning through practical application of materials requiring department laboratories</li> <li>- Project-Based Learning Strategy</li> </ul> <p style="text-align: center;"><b>Assessment Methods</b></p> <ul style="list-style-type: none"> <li>*Periodic Tests</li> <li>*Surprise Tests</li> <li>*Classroom Interaction and Participation</li> <li>*Research Assignments and Reports</li> <li>*Practical and Applied Tests</li> </ul> <p style="text-align: center;"><b>C- Affective and Value-Based Objectives</b></p> <p>C1- Strengthening the spirit of belonging to a team within the institution and the desire to provide the best</p> <p>C2- Strengthening the desire to compete to raise the educational level</p> <p>C3- Strengthening the sense of belonging to the specialty and</p> |
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developing the desire to work in information institutions

### Teaching and Learning Methods

- Promote the value of integrity and transparency in financial transactions.
- Understand the importance of social responsibility in financial decision-making and its impact on society.
- Promote the value of teamwork and collaboration with others to achieve financial goals.
- Appreciate the importance of sustainability in financial decisions and how they impact the future.

**D - General and transferable skills (other skills related to employability and personal development).**

1. Project-based learning: Assigning students practical projects related to financial concepts.
2. Case studies: Analyzing real-life cases of companies or projects to apply financial concepts.
3. Cooperative learning: Organizing students into small groups to work together on tasks or projects.

This promotes knowledge sharing and interaction among students.

4. Interactive lectures: Using techniques such as brainstorming or surveys during lectures.

5. Problem-based learning: Presenting complex financial problems that require students to analyze and find solutions.

6. Use of technology: Using tools such as financial analysis software

| Week | Hours | Unit or subject name | Teaching method | Learning method | Evaluation method |
|------|-------|----------------------|-----------------|-----------------|-------------------|
|------|-------|----------------------|-----------------|-----------------|-------------------|

|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      | <p>or simulations to apply concepts.</p> <p>7. Workshops: Organizing workshops to teach specific skills such as budgeting or financial analysis.</p> <p>8. Self-directed learning: Encouraging students to research and explore additional topics on their own.</p> <p>9. Discussion facilitation: Encouraging discussions about contemporary financial issues or emerging trends.</p> <p>10. Continuous assessment: Using short tests, homework, and projects to continually assess student understanding.</p> |
| 10. Course Structure |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

|          |   |                                                            |                           |                                                                                                                                                                |                                             |
|----------|---|------------------------------------------------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| Week 1,2 | 4 | The concept of financial management                        | Practical+<br>Theoretical | Role-play,<br>video<br>presentation,<br>discussion and<br>explanation<br>Questions and<br>answers,<br>presentation                                             | Oral,<br>written and<br>electronic<br>tests |
|          |   | Its functions and objectives of financial management       | Practical+<br>Theoretical |                                                                                                                                                                |                                             |
|          | 4 | The impact of inflation on financial management decisions  | Practical+<br>Theoretical |                                                                                                                                                                |                                             |
|          |   | The relationship of other sciences to financial management | Practical+<br>Theoretical |                                                                                                                                                                |                                             |
| Week 3   | 4 | Sources and types of funds                                 | Practical+<br>Theoretical |                                                                                                                                                                |                                             |
| Week 4,5 | 4 | Legal forms of companies                                   | Practical+<br>Theoretical |                                                                                                                                                                |                                             |
|          |   | Agency problem                                             |                           |                                                                                                                                                                |                                             |
| Week 6,7 | 4 | Balance sheet                                              | Practical+<br>Theoretical | Video<br>presentation,<br>explanation,<br>Q&A,<br>discussion, role-<br>playing,<br>workshops, and<br>practical<br>applications for<br>companies using<br>Eacal |                                             |
|          |   | Income statement                                           |                           |                                                                                                                                                                |                                             |
|          | 4 | cash flow tatement                                         |                           |                                                                                                                                                                |                                             |
| Week 8,9 | 4 | Tax analysis                                               | Practical+<br>Theoretical | Presentation,<br>explanation,<br>questions and<br>answers,<br>discussion and<br>practical<br>applications for<br>companies                                     |                                             |
|          |   | Taxes on the ncome of joint-stock companies                |                           |                                                                                                                                                                |                                             |
|          | 4 | The relationship between extinction and tax savings        |                           |                                                                                                                                                                |                                             |

|               |   |                                               |                        |                                                                                               |                                    |
|---------------|---|-----------------------------------------------|------------------------|-----------------------------------------------------------------------------------------------|------------------------------------|
|               |   | Methods for calculating the marginal tax rate |                        |                                                                                               |                                    |
| Week 10       | 4 | Financial analysis concept                    | Practical+ Theoretical | Role-play, video presentation, discussion and explanation Questions and answers, presentation | Oral, written and electronic tests |
|               |   | The importance of financial analysis          | Practical+ Theoretical |                                                                                               |                                    |
| Week11,12, 13 | 4 | Vertical and horizontal analysis              |                        | Practical+ Theoretical                                                                        |                                    |
|               | 4 | Financial ratios                              |                        |                                                                                               |                                    |
|               | 4 | Sources and uses of funds                     |                        |                                                                                               |                                    |
| Week 14,15    | 4 | Percentage of Sales Entry                     | Practical+ Theoretical | Discussion and explanation, questions and answers                                             |                                    |
|               | 4 | Financial planning goals and steps            |                        |                                                                                               |                                    |

## 11. Course Evaluation

The development plan for this course aims to update the content by incorporating the latest developments in financial systems, using new concepts in the field of financial management, and using electronic devices to present information and issues. The teaching methods used will also be evaluated to ensure they are aligned with the required learning outcomes and provide a more interactive and attractive educational experience for students.

## 12. Learning and Teaching Resources

|                                              |                                                                                                                                                                                   |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricula books, if any) | 1. Financial Management – Professor Dr. Mohammed Al–Amri, 2011<br>• Financial Management – Professor Dr. Khalil Al–Shamaa<br>• Introduction to Financial Management and Financial |
| Main references (sources)                    |                                                                                                                                                                                   |

|                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                    | <p>Analysis, Amman, Jordan: Dar Al–Mustaqbal for Publishing and Distribution, 2000</p> <ul style="list-style-type: none"> <li>• Advanced Financial Management, Dr. Adnan Tayeh Al–Naimi + Prof. Dr. Arshad Fouad Al–Tamimi, Al–Yazouri Scientific Publishing and Distribution House, 2019</li> <li>• Financial and Banking Management, Osama Abdulkhaleq Al–Ansari – Wael Publishing House, 1995</li> <li>• Scientific Journals in Accounting and Financial Management Specialties</li> <li>• Specialized Websites</li> </ul> |
| Recommended books and references (scientific journals, reports...) | .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Electronic References, Websi                                       | Websites on Management Financial Management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

## Course Description Form/Strategic Management

|                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Educational institution                                                                                                                                                                                                                                                                                                                                           |
| Mosul Technical Administrative College                                                                                                                                                                                                                                                                                                                               |
| 2. Scientific Department / Center                                                                                                                                                                                                                                                                                                                                    |
| Information Technology Management Department/Third Stage                                                                                                                                                                                                                                                                                                             |
| 3. Course Name/Code                                                                                                                                                                                                                                                                                                                                                  |
| Strategic management/ELM310                                                                                                                                                                                                                                                                                                                                          |
| 4. Available attendance forms                                                                                                                                                                                                                                                                                                                                        |
| Weekly/face to face                                                                                                                                                                                                                                                                                                                                                  |
| 5. semester/year                                                                                                                                                                                                                                                                                                                                                     |
| Fall semester/2026                                                                                                                                                                                                                                                                                                                                                   |
| 6. Number of study hours (total)                                                                                                                                                                                                                                                                                                                                     |
| 60 hours                                                                                                                                                                                                                                                                                                                                                             |
| 7. Date this description was prepared                                                                                                                                                                                                                                                                                                                                |
| 1/9/2025                                                                                                                                                                                                                                                                                                                                                             |
| 8. Course objectives                                                                                                                                                                                                                                                                                                                                                 |
| Introducing the student to the principles, foundations, concepts and terminology of strategic management according to a main model consisting of five axes: (strategic direction, strategic analysis, strategic formulation, strategic implementation, strategic control and evaluation), in addition to informing students of various topics related to these axes. |
| 9. Course outcomes, teaching, learning and assessment methods                                                                                                                                                                                                                                                                                                        |
| <b>A- Cognitive objectives</b><br><br>A1-Cognitive objectives<br>1- Introducing the student to the nature of strategic management and the concept of strategic management.                                                                                                                                                                                           |



2- Introducing the student to strategic management models and the main model adopted in the organization.

3- Introducing the student to the importance, principles and foundations of strategic management.

4- Introducing the student to the classification of strategic options at the organizational level, business unit level, and functional level.

#### **B -Course skill objectives.**

1 – Teaching the student the scientific methods used to study strategic management.

2- The student learns about the development stages of the study of strategic management and business policies.

#### **Teaching and learning methods**

-Explain the scientific material to students in detail.

- Cooperative learning: Students work in groups on strategic projects, such as preparing a comprehensive strategic plan for a virtual organization.

- Discussion and dialogue on vocabulary related to the topic.

- Develops teamwork, communication and group decision-making skills.

- Interactive lectures supported by visual presentations.

#### **Evaluation methods**

\*Periodic tests

\*Surprise tests

\*Classroom interaction and participation

\*Research assignments and reports

\*Practical and applied tests

#### **C-Affective and value-based goals**

c1- Highlighting the scope of benefiting from the study and analysis of human behavior in the organization.

A2- Providing comprehensive knowledge about organizational behavior, its concepts, characteristics, importance, and related topics, so that the student has the necessary knowledge of this subject.

## 1. First: Teaching methods

### 1. Interactive lectures

- Explain strategic concepts and models (such as SWOT, PESTEL, Porter's Five Forces...).
- Use presentations and diagrams.

### 2. Case Studies

- Analysis of real situations of local and international companies.
- Understand how to apply strategies in different environments.

### 3. Brainstorming and class discussions

- Discussing realistic strategic challenges.
- Developing group strategic thinking skills.

### 4. Group projects

- Preparing a strategic plan for a selected company.
- Promote teamwork and applied research.

### 5. Field visits / hosting lecturers from real life

- To link theoretical material with real market experiences.
- 

## Second: Learning methods

### 1. Problem-based learning (PBL)

- Pose a real strategic problem and study how to solve it.

### 2. Self-learning

- Reading modern strategy books and articles.
- Preparing individual reports or reviews of recent research.

### 3. E-learning / Blended learning

- Use learning platforms (such as Moodle or Google Classroom) to share resources.
- Watch video lectures and discuss them later.

### 4. Business Simulations

- Experience making strategic decisions in a realistic simulation environment.
- 

## Third: Evaluation methods

(To complete the picture, it is preferable to mention it with the teaching and learning methods)

- Theoretical and practical exams
- Case study and project evaluation
- Individual and group presentations
- Classroom participation
- Strategic Analysis Reports

| 10. Course structure          |                         |                                                                                                                                                          |                                                                            |         |            |
|-------------------------------|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------|------------|
| Evaluation method             | Teaching method         | Unit name/topic                                                                                                                                          | Required learning outcomes                                                 | watches | week       |
| Interaction and participation | Lectures and discussion | General concepts, concept of management, concept of strategy, concept of strategic management, stages of development of strategic management             | What is strategic management?                                              | 3 hours | the first  |
| Interaction and participation | Lectures and discussion | Strategic management and strategic planning, components of strategic management, levels of strategic management, principles and foundations of strategic | Recognizing the importance of strategic management for business management | 3 hours | the second |

|                                                           |                                          |                                                                                                                                                                                                                                                                   |                                                  |         |           |
|-----------------------------------------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|---------|-----------|
|                                                           |                                          | managem<br>nt.                                                                                                                                                                                                                                                    |                                                  |         |           |
| Interact,<br>participate<br>and test daily.               | Lectures and<br>discussion               | Approache<br>s to<br>studying<br>strategic<br>manageme<br>nt, the<br>strategic<br>manageme<br>nt process,<br>the main<br>adopted<br>model<br>(orientatio<br>n - analysis<br>-<br>formulatio<br>n -<br>implement<br>ation -<br>control -<br>and<br>evaluation<br>) | Learn about<br>strategic<br>management<br>models | 3 hours | the third |
| Interaction,<br>engagement,<br>and pop-up<br>testing      | Lectures and<br>practical<br>application | Vision,<br>concept,<br>characteris<br>tics -<br>justificatio<br>ns.                                                                                                                                                                                               | Identifying the<br>strategic<br>direction        | 3 hours | Fourth    |
| Interaction,<br>participation,<br>and semester<br>testing | Lectures and<br>discussion               | Concept,<br>contents,<br>characteris<br>tics and<br>importanc<br>e                                                                                                                                                                                                | Message<br>recognition                           | 3 hours | Fifth     |
| Interaction,<br>Participation,<br>and Reports             | Lectures,<br>discussion<br>and practical | Concept,<br>characteris<br>tics,                                                                                                                                                                                                                                  | goals                                            |         | Sixth     |

|                                        |                                                |                                                                                                                             |                                          |  |            |
|----------------------------------------|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------------------------------------|--|------------|
|                                        | application                                    | justifications, mechanisms for formulating goals, contrast between goals and objectives                                     |                                          |  |            |
| Interaction, participation, and duties | Lectures, discussion and practical application | Environmental concept, environmental classification, environmental ambiguity, concept - classification, causes of ambiguity | Environmental Analysis Recognition       |  | Seventh    |
| Interaction, participation, and duties | Lectures, discussion and practical application | General external environment analysis<br>PEST analysis<br>Political factors - socio-economic factors, technological factors | Getting to know the external environment |  | The eighth |
| Presenting and explaining              | Lectures, discussion                           | Legislative, legal,                                                                                                         | Getting to know the                      |  | Ninth      |

|                                        |                                                |                                                                                                                                                                    |                                   |  |          |
|----------------------------------------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|--|----------|
| reports through presentation           | and practical application                      | cultural, and educational factors, analysis of financial factors                                                                                                   | external environment              |  |          |
| Interaction, participation, and duties | Lectures, discussion and practical application | The concept of organizational structure, dimensions of organizational structure, methods of designing organizational structures, types of organizational structure | Organizational structure analysis |  | tenth    |
| Daily test                             | Lectures and discussion                        | Main activities, supporting activities, strategic formulation, concept of strategic formulation, theories adopted in strategy                                      | Learn about value chain analysis  |  | Eleventh |

|                               |                         |                                                                                                                                                                                     |                                                                      |  |            |
|-------------------------------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|--|------------|
|                               |                         | formulation.                                                                                                                                                                        |                                                                      |  |            |
| Interaction and participation | Lectures and discussion | Planning perspective, logical growth perspective, visionary perspective                                                                                                             | Learn about strategic formulation according to management directions |  | twelfth    |
| Reports                       | Practical application   | The concept of strategic options and its stages, the practical stage of preparing strategic options (setting alternatives, evaluating alternatives, choosing the best alternative). | Identify strategic options                                           |  | thirteenth |
| Interaction and participation | Lectures and discussion | Strategic options at the organizational, business unit, and functional levels.                                                                                                      | Classification of strategic options                                  |  | Fourteenth |

|                                                        |                       |                                                                                                                                                                                                       |                         |  |           |
|--------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--|-----------|
| Presenting and explaining reports through presentation | Practical application | The concept of strategic implementation and its importance, determinants of strategic implementation, prevailing systems for strategic implementation, MacKenzie's model for strategy implementation. | Strategy implementation |  | fifteenth |
|--------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--|-----------|

|                                                                                                                                                                                                                                                                                                 |                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| 11. infrastructure                                                                                                                                                                                                                                                                              |                                                                          |
|                                                                                                                                                                                                                                                                                                 | 1- Required textbooks                                                    |
| Strategic Management – Concepts and Applications                                                                                                                                                                                                                                                | 2- Main references (sources)                                             |
| Scientific journals in the fields of information technology                                                                                                                                                                                                                                     | A- Recommended books and references (scientific journals, reports, etc.) |
| Specialized websites                                                                                                                                                                                                                                                                            | B - Electronic references, websites...                                   |
| 12. Curriculum Development Plan                                                                                                                                                                                                                                                                 |                                                                          |
| - Meeting with the faculty at the end of each semester to review the curricula and how to develop them, add new lessons to the current curricula, record the course content in the curriculum form annually, and propose any changes or amendments to the curricula for approval by the College |                                                                          |



Council and subsequently by the University Council, in accordance with university directives. The curricula are also published and documented on the college website, and lectures are uploaded electronically to the website.

Providing the college library with modern scientific books from well-known international publishing houses, which enhance the vocabulary of the lessons given to the college.

### Course Description Form / E-Business

|                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Educational institution                                                                                                                                                          |
| Mosul Technical Administrative College                                                                                                                                              |
| 2. Scientific Department / Center                                                                                                                                                   |
| Information Technology Management Department / third Stage                                                                                                                          |
| 3. Course Name / Code                                                                                                                                                               |
| E-Business / ELM304                                                                                                                                                                 |
| 4. Available attendance forms                                                                                                                                                       |
| Weekly/face to face                                                                                                                                                                 |
| 5. semester/year                                                                                                                                                                    |
| Spring Semester /2026                                                                                                                                                               |
| 6. Number of study hours (total)                                                                                                                                                    |
| 60 Hours                                                                                                                                                                            |
| 7. Date this description was prepared                                                                                                                                               |
| 1/9/2025                                                                                                                                                                            |
| 8. Course objectives                                                                                                                                                                |
| The course seeks to enrich students with a set of concepts and theories encompassing diverse implications and connotations, while clarifying the distinctions among these theories. |
| 9. Course outcomes, teaching, learning and assessment methods                                                                                                                       |

**A. Cognitive Objectives**

- Enable students to understand the nature of e-business.
- Develop students' knowledge related to the field of e-business.
- Provide an analytical presentation of e-business theories, exploring their organizational dimensions within the digital environment.

**B. Skills-Based Objectives**

- Utilize course applications as a foundation for developing graduation projects.
- Reflect students' understanding of e-business concepts and theories through behavioral perspectives, analyzing differences among models and their organizational implications.

**Learning Outcomes**

- Understand and interpret the fundamental concepts of e-business, including digital business models and their operational mechanisms online.
- Analyze technological, economic, and legal factors influencing the e-business environment and employ strategic analysis tools to assess opportunities and challenges in the digital marketplace.
- Distinguish between various digital platforms and technical infrastructures supporting e-operations, and evaluate their suitability for organizational and operational objectives.
- Comprehend decision-making processes in dynamic electronic environments and utilize digital data and information to support these decisions.
- Assess user and customer experiences in electronic environments and connect them to the performance and marketing strategies of digital organizations.
- Develop proposals for electronic projects or digital solutions that practically and effectively apply e-business principles.
- Apply analytical and critical thinking to address electronic challenges and propose innovative, implementable solutions using modern digital tools and technologies.

**Teaching and Learning Methods**

- Theoretical lectures.
- Student presentations.
- Case studies.
- Group discussions and applied workshops.
- Individual or group projects.
- Problem-Based Learning (PBL).
- Use of simulations or management games, when available.

**10. Course structure**

| Week      | Hours | Intended Learning Outcomes        | Topic                                                                          | Teaching Method | Assessment Method |
|-----------|-------|-----------------------------------|--------------------------------------------------------------------------------|-----------------|-------------------|
| Week 1    | 4     | Knowledge & Practical Application | Fundamentals of E-Management: Elements and Importance of Electronic Management | Theoretical     | Exams and Reports |
| Weeks 2–3 | 4     | Knowledge & Practical             | Concept, Rationale,                                                            | Theoretical     | Exams and Reports |

|             |   |                                   |                                                                                            |                         |                   |
|-------------|---|-----------------------------------|--------------------------------------------------------------------------------------------|-------------------------|-------------------|
|             |   | Application                       | and Objectives of E-Government                                                             |                         |                   |
| Weeks 4–5   | 4 | Knowledge & Practical Application | Principles of Implementing E-Government                                                    | Theoretical             | Exams and Reports |
| Weeks 6–7   | 4 | Knowledge & Practical Application | Nature of E-Business: Concept, Importance, and Strategies                                  | Theoretical             | Exams and Reports |
| Weeks 8–10  | 4 | Knowledge & Practical Application | Strategies and Models of E-Business                                                        | Theoretical & Practical | Exams and Reports |
| Weeks 11–12 | 4 | Knowledge & Practical Application | Concept, Importance, and Types of E-Commerce                                               | Theoretical & Practical | Exams and Reports |
| Weeks 13–15 | 4 | Knowledge & Practical Application | Case Studies in E-Business (Electronic Funds Transfer - EFT, Digital Nervous System - DNS) | Theoretical & Practical | Exams and Reports |

#### 11. Infrastructure

|                                                                          |                                                                                                                                                                                                                               |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1- Required textbooks                                                    |                                                                                                                                                                                                                               |
| 2- Main references (sources)                                             | <ul style="list-style-type: none"> <li>E-Business: A Managerial and Technological Perspective – Dr. Muzher Shaban Al-Ani</li> <li>E-Business – Dr. Saad Ghalib Yassin</li> <li>E-Commerce – Dr. Saad Ghalib Yassin</li> </ul> |
| A- Recommended books and references (scientific journals, reports, etc.) | Scientific journals in the fields of information technology                                                                                                                                                                   |
| B - Electronic references, websites...                                   | Specialized websites                                                                                                                                                                                                          |

#### 12. Curriculum Development Plan

- Meeting with the faculty at the end of each semester to review the curricula and how to develop them, add new lessons to the current curricula, record the course content in the curriculum form annually, and propose any changes or amendments to the curricula for approval by the College Council and subsequently by the University Council, in accordance

with university directives. The curricula are also published and documented on the college website, and lectures are uploaded electronically to the website.

- Providing the college library with modern scientific books from well-known international publishing houses, which enhance the vocabulary of the lessons given to the college.

## TEMPLATE FOR COURSE SPECIFICATION

### HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

#### COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

|                                                      |                                                                                                    |
|------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| 1. Teaching Institution                              | Northern Technical University / Technical Administrative College / Mosul                           |
| 2. University Department/Centre                      | Department of Information Technology Management                                                    |
| 3. Course title/code                                 | Commercial law                                                                                     |
| 4. Programmed(s) to which it contributes             | Mandatory                                                                                          |
| 5. Modes of Attendance offered                       |                                                                                                    |
| 6. Semester/Year                                     | Fall semester/2026                                                                                 |
| 7. Number of hours tuition (total)                   | 75 hours                                                                                           |
| 8. Date of production/revision of this specification | 1/9/2025                                                                                           |
| 9. Aims of the Course                                |                                                                                                    |
|                                                      | Study of the law and the characteristics of the legal base and knowledge of the sources of the law |
|                                                      | Research the theory of trader and business and what is commercial law                              |
|                                                      | Research the theory of private companies and their composition and public companies in Iraqi law   |
|                                                      | Study of commercial papers, commercial transfer, bond for order and instrument                     |
|                                                      |                                                                                                    |
|                                                      |                                                                                                    |
|                                                      |                                                                                                    |

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10· Learning Outcomes, Teaching, Learning and Assessment Methode                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <p>A- Knowledge and Understanding</p> <p>A1. Enabling students to know the law and everything related to the legal rule and its sources.</p> <p>A2. Knowledge of business in Iraqi law and distinguishing the trader from other natural persons.</p> <p>A3. Developing students' abilities in the field of commercial companies and public companies and developing their skills around them.</p> <p>A4. Learn about business papers and their role in economic life in detail.</p> <p>A5.</p> <p>A6 .</p> |
| <p>B. Subject-specific skills</p> <p>B1. The ability to work in the field of trade and commercial companies and dealing with commercial papers in the field of practice.</p> <p>B2.</p> <p>B3.</p>                                                                                                                                                                                                                                                                                                         |
| Teaching and Learning Methods                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Periodic reports/periodic tests/practical case study.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Assessment methods                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Periodic examinations / direct questions / special reporting.                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <p>C. Thinking Skills</p> <p>C1. Development of legal culture.</p> <p>C2. Develop interaction in the field of business and encourage entry into this field.</p> <p>C3. Developing capabilities around companies and how to work in them and deal with their shares.</p> <p>.C4. Develop knowledge about business papers and acquire their own skills</p>                                                                                                                                                   |
| Teaching and Learning Methods                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Student totals / case study / special reporting.                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Assessment methods                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

Periodic examinations / direct questions / special reporting.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D1. Develop the skills of the students and prepare them for sticky in the field of public service or the private sector.

D2. Develop personal skills to develop their own studies and start their own projects.

D3.

D4.



| 11. Course Structure |        |                            |                                                                                                                                                                                 |                 |                   |
|----------------------|--------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------|
| Week ILOs            | Hours  | ILOs                       | Unit/Module or Topic Title                                                                                                                                                      | Teaching Method | Assessment Method |
| <b>the first</b>     | 5hours | Knowledge and practicality | Defining the law and the characteristics of the legal base and distinguishing it from the rules of ethics and the rules of religion<br>Branches of law and types of legal rules | theoretical     | Tests and reports |
| <b>The second</b>    | 5hours | Knowledge and practicality | Sources of law, legal, sharia, Islamic law, justice rules, court rulings and opinions of jurisprudence<br>Sources of compliance in Iraqi law/contract                           | theoretical     | Tests and reports |
| <b>the third</b>     | 5hours | Knowledge and practicality | The definition of the contract pillars of the contract types of contracts effects of the contract Liability                                                                     | theoretical     | Tests and reports |
| <b>the fourth</b>    | 5hours | Knowledge and practicality | Enrichment for no reason, the sole will of the law.<br>Commercial law                                                                                                           | theoretical     | Tests and reports |
| <b>Fifth</b>         | 5hours | Knowledge and practicality | Definition and development of commercial law and business identification<br>Business identification theories                                                                    | theoretical     | Tests and reports |
| <b>Sixth</b>         | 5hours | Knowledge and practicality | Business in Iraqi law                                                                                                                                                           | theoretical     | Tests and reports |
| <b>seventh</b>       | 5hours | Knowledge and practicality | Trader theory of trader definition and conditions of acquiring the status of trader<br>Merchant duties                                                                          | theoretical     | Tests and reports |
| <b>Eighth</b>        | 5hours | Knowledge and practicality | Corporate theory and development in Iraq<br>Introducing the company and its characteristics                                                                                     | theoretical     | Tests and reports |
| <b>Nine</b>          | 5hours | Knowledge and practicality | Characteristics of the company's contract and distinguishing it from others                                                                                                     | theoretical     | Tests and reports |
|                      |        | Knowledge and practicality | Division of companies in Iraqi jurisprudence and law                                                                                                                            |                 |                   |

|                   |        |                            |                                                                                                                                                                                                                                                        |             |                   |
|-------------------|--------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------------|
| <b>The tenth</b>  | 5hours | Knowledge and practicality | Procedures and requirements for establishing the company<br>The company's equity capital                                                                                                                                                               | theoretical | Tests and reports |
| <b>eleventh</b>   | 5hours | Knowledge and practicality | Distribution of profits and losses in the company<br>Company management and control of the company                                                                                                                                                     | theoretical | Tests and reports |
| <b>twelfth</b>    | 5hours | Knowledge and practicality | Company and transformation, merger and liquidation<br>Simple company and public companies' definition, characteristics and foundation                                                                                                                  | theoretical | Tests and reports |
| <b>Thirteenth</b> | 5hours | Knowledge and practicality | Management and control of the public company<br>transformation, merger and liquidation<br>Commercial papers introduced and their characteristics, commercial transfer definition and conditions                                                        | theoretical | Tests and reports |
| <b>fourteenth</b> | 5hours | Knowledge and practicality | Data to be made in the trade transfer<br>Endorsement, loyalty, intervention and trading of trade                                                                                                                                                       | theoretical | Tests and reports |
| <b>Fifteenth</b>  | 5hours | Knowledge and practicality | Support for the order of the bill of identification, characteristics, conditions of construction and data to be returned<br>Instrument definition, construction conditions, types of instruments, distinction between instrument, transfer and billing | theoretical | Tests and reports |

## 12. Infrastructure

|                                                                                          |                                                                                                                                               |
|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Required reading:<br>· CORE TEXTS<br>· COURSE MATERIALS<br>· OTHER                       | Literature on law, commercial law, companies and commercial papers available at the College Library and the Central Library of the University |
| Special requirements (include for example workshops, periodicals, IT software, websites) |                                                                                                                                               |

|                                                                                                        |  |
|--------------------------------------------------------------------------------------------------------|--|
| Community-based facilities<br>(include for example, guest<br>Lectures , internship , field<br>studies) |  |
|--------------------------------------------------------------------------------------------------------|--|

13. Admissions It was suggested that the article be divided into two phases of studies in the second phase, the definition of law, commercial law and trader's theory would be studied, and in the third phase companies and commercial papers would be studied.

Pre-requisites

Minimum number of students

Maximum number of students

(Course Description Form)

|                                                                                                                                                                                                                                                                                                                     |                                                                        |                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| 1-Teaching Institution                                                                                                                                                                                                                                                                                              |                                                                        |                                                                                 |
| <b>Administrative Technical College / Mosul</b>                                                                                                                                                                                                                                                                     |                                                                        |                                                                                 |
| ٢- University Department/Centre                                                                                                                                                                                                                                                                                     |                                                                        |                                                                                 |
| Northern Technical University / Department of Information techniques management                                                                                                                                                                                                                                     |                                                                        |                                                                                 |
| 3-Course title/code                                                                                                                                                                                                                                                                                                 |                                                                        |                                                                                 |
| English Language /NTU300                                                                                                                                                                                                                                                                                            |                                                                        |                                                                                 |
| 4- Available forms of attendance                                                                                                                                                                                                                                                                                    |                                                                        |                                                                                 |
| Presence/face to face                                                                                                                                                                                                                                                                                               |                                                                        |                                                                                 |
| 5- Semester/Year                                                                                                                                                                                                                                                                                                    |                                                                        |                                                                                 |
| Fall semester/ Third Level /2026                                                                                                                                                                                                                                                                                    |                                                                        |                                                                                 |
| 6-Number of hours tuition (total)                                                                                                                                                                                                                                                                                   |                                                                        |                                                                                 |
| 30 hours                                                                                                                                                                                                                                                                                                            |                                                                        |                                                                                 |
| 7- Date of production/revision of this specification                                                                                                                                                                                                                                                                |                                                                        |                                                                                 |
| 1/9/2025                                                                                                                                                                                                                                                                                                            |                                                                        |                                                                                 |
| 8-(Course Objectives )General Course Objectives                                                                                                                                                                                                                                                                     |                                                                        |                                                                                 |
| 1 .Provide students with basic concepts related to the use of English language<br>2. Provide students with basic vocabulary<br>3 .Enable the students to construct simple sentences.<br>4 .Enable the students to communicate effectively.<br>5. Provide students with the basic culture and literature of English. |                                                                        |                                                                                 |
| 1– Course outcomes, teaching, learning and assessment methods                                                                                                                                                                                                                                                       |                                                                        |                                                                                 |
| Learning Outcomes (LOS)                                                                                                                                                                                                                                                                                             | Learning and teaching methods                                          | Evaluation methods                                                              |
| ١ The student learns about the nature of English language.                                                                                                                                                                                                                                                          | Theoretical lectures using educational tools (PowerPoint presentations | Daily and monthly tests                                                         |
| ٢-To explain to construct sentences in English.                                                                                                                                                                                                                                                                     | Theoretical lectures                                                   | management Solving exercises within the lecture and assigning external homework |
| ٣ –Developing students'                                                                                                                                                                                                                                                                                             | View the companies' work and achievements                              | Discussions and dialogues                                                       |

| ability to communicate effectively. Provide student with the basic knowledge of culture and literature. |       |                                  |                             |                 |                         |
|---------------------------------------------------------------------------------------------------------|-------|----------------------------------|-----------------------------|-----------------|-------------------------|
| 2- Course steuctuer (theoretical and scientific vocabulary)                                             |       |                                  |                             |                 |                         |
| Week                                                                                                    | Hours | Required learning outcomes       | Name of the unit/topic      | Teaching method | Evaluation method       |
| First                                                                                                   | 2     | Student understanding the lesson | Present simple tens         | Lecture         | Daily and monthly tests |
| Second                                                                                                  | 2     | Student understanding the lesson | Past simple tense           | Lecture         | Daily and monthly tests |
| Third                                                                                                   | 2     | Student understanding the lesson | Passive and act voices      | Lecture         | Daily and monthly tests |
| fourth                                                                                                  | 2     | Student understanding the lesson | Writing                     | Lecture         | Daily and monthly tests |
| Fifth                                                                                                   | 2     | Student understanding the lesson | Reading                     | Lecture         | Daily and monthly tests |
| Sixth                                                                                                   | 2     | Student understanding the lesson | Conversation                | Lecture         | Daily and monthly tests |
| Seventh                                                                                                 | 2     | Student understanding the lesson | Tips of Writing             | Lecture         | Daily and monthly tests |
| The eighth                                                                                              | 2     | Student understanding the lesson | Tips of reading             | Lecture         | Daily and monthly tests |
| Ninth                                                                                                   | 2     | Student understanding the lesson | Writing ab different topics | Lecture         | Daily and monthly tests |

|            |   |                                  |                                    |         |                         |
|------------|---|----------------------------------|------------------------------------|---------|-------------------------|
| tenth      | 2 | Student understanding the lesson | Short story 1                      | Lecture | Daily and monthly tests |
| Eleventh   | 2 | Student understanding the lesson | Short story 2                      | Lecture | Daily and monthly tests |
| Twelfth    | 2 | Student understanding the lesson | Imperative, negative and questions | Lecture | Daily and monthly tests |
| Thirteenth | 2 | Student understanding the lesson | Function language: basics          | Lecture | Daily and monthly tests |
| Fourteenth | 2 | Student understanding the lesson | Conditional sentence               | Lecture | Daily and monthly tests |
| Fifteen    | 2 | Student understanding of lesson  | General Exam                       | Lecture | Daily and monthly tests |

## 1– Curriculum development plan

### 2–Aligning learning outcomes with the National Qualifications Framework:

\*Formulating clear and measurable learning outcomes.

\*Linking course outcomes to the skills and knowledge required by the labor market.

### 3– Developing teaching methods and techniques

\*Introducing active learning methods (such as problem–based learning,

brainstorming, and P2 studies.

\*Using modern technology in presenting the material (such as e-learning, educational videos, simulations.

#### **4– Enhancing students' critical and analytical thinking skills:**

| 2– infrastructure                                                                                                                                                                                                                                                                                                                         |                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Classrooms, laboratories and workshops                                                                                                                                                                                                                                                                                                    | Available                                                                                          |
| Required books and curriculum                                                                                                                                                                                                                                                                                                             | Publications on English Language available in college library and the university's central library |
| Main references (sources)                                                                                                                                                                                                                                                                                                                 |                                                                                                    |
| Recommended books and references<br>New Headway Plus (Pre-Intermediate) , John and Liz Soars, Oxford (Workbook)<br><a href="https://elt.oup.com/student/headway?cc=global&amp;selLanguage=en">https://elt.oup.com/student/headway?cc=global&amp;selLanguage=en</a> (Scientific and Applied Research Projects)<br>journals, reports,.....) |                                                                                                    |
| Electronic references and websites                                                                                                                                                                                                                                                                                                        | English language websites.                                                                         |

## Course Description Form 2026 (Visual Programming)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Educational Institution: Mosul Technical College of Administration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2. Academic Department/Center: Department of Information Technology Management/Level third                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 3. Course Title/Code: ELM306/ Visual Programming                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 4. Available Attendance Formats: Weekly                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 5. Semester/Year: Spring semester/2026                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 6. Number of Class Hours (Total): 60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 7. Date of Preparation: June 30, 2026                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <p>This course aims to teach the fundamentals of programming, problem-solving algorithms, and their translation into programs using a structured procedural programming language. It introduces the concept of small-scale programming and specifically enables the student to:</p> <p><b>First:</b> Understand the concepts of computer programs, algorithms, operating systems, compilers, encoding types, and programming languages, along with an introduction to the .NET development environment and the basics and uses of C#. The course focuses on essential programming commands such as input/output, assignment, arithmetic expressions, conditional and iterative statements, strings, tables, and arrays.</p> <p><b>Second:</b> Practice using basic and applied algorithms and programming in C# through general and important classic examples, a variety of practical exercises, solved and unsolved problems, training assignments, and various activities.</p> |
| 9. Course Outcomes, Teaching, Learning, and Evaluation Methods                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <p><b>A – Cognitive Goals</b></p> <ul style="list-style-type: none"> <li>• <b>A1:</b> Provide comprehensive knowledge of C# programming basics.</li> <li>• <b>A2:</b> Understand Microsoft .NET concepts and the structure of the .NET Framework, as well as beginner-level C#.</li> </ul> <p><b>A3:</b> Master general rules of C# statements, instruction blocks, variable scopes, assignment, conditional and iterative instructions (e.g., while), and the five basic algorithmic instructions in C#.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <p><b>B – Skill-Based Objectives</b></p> <ul style="list-style-type: none"> <li>• <b>B1:</b> Identify and master the use of control statements derived from basic instructions, including loop types, structured programming exceptions, the continue statement, and branching instructions in C#.</li> <li>• <b>B2:</b> Understand and master the use of compound data types, string types, tables, and arrays, including multidimensional arrays and dynamically sized arrays.</li> </ul> <p><b>B3:</b> Understand and master the structure of C# code, methods (procedures), how they are declared and called, parameter passing methods, return values, and variable and method scope within classes.</p>                                                                                                                                                                                                                                                                     |
| <p>C. Emotional and Value-Based Goals</p> <ul style="list-style-type: none"> <li>- The ability to interact and understand people.</li> <li>- The manager's knowledge and understanding of the type of work and the ability to visualize and see dimensions.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <p>D. General and Transferable Skills (other skills related to employability and personal development).</p> <ul style="list-style-type: none"> <li>• <b>D1:</b> Improve computer and communication skills.</li> <li>• <b>D2:</b> Develop self-reliance in knowledge acquisition.</li> <li>• <b>D3:</b> Ability to transfer experience to others.</li> <li>• <b>D4:</b> Ability to overcome real-world challenges and obstacles.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <p>E. Teaching and Learning Methods</p> <ul style="list-style-type: none"> <li>- Same as listed above.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <p>F. Assessment Methods</p> <p>Midterm, final exams, quizzes, and assignments.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |



| 10. Course Structure                                                                                                                                                                                                                                                           |       |                                     |                                          |                   |                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------|------------------------------------------|-------------------|-------------------------|
| Week                                                                                                                                                                                                                                                                           | Hours | Intended Learning Outcomes          | Unit / Topic                             | Teaching Method   | Assessment Method       |
| Weeks 1–2                                                                                                                                                                                                                                                                      | 4     | Knowledge and practical application | Basics of C# language                    | Theory + Practice | Tests + Practical Tasks |
| Weeks 3–4                                                                                                                                                                                                                                                                      | 4     | Knowledge and practical application | Statements in C#                         | Theory + Practice | Tests + Practical Tasks |
| Weeks 5–6                                                                                                                                                                                                                                                                      | 4     | Knowledge and practical application | Continuation of algorithmic language     | Theory + Practice | Tests + Practical Tasks |
| Weeks 7–8                                                                                                                                                                                                                                                                      | 4     | Knowledge and practical application | Compound data types (structures)         | Theory + Practice | Tests + Practical Tasks |
| Weeks 8–9                                                                                                                                                                                                                                                                      | 4     | Knowledge and practical application | Introduction to methods and procedures   | Theory + Practice | Tests + Practical Tasks |
| Week 10                                                                                                                                                                                                                                                                        | 4     | Knowledge and practical application | Exercises and problem-solving activities | Theory + Practice | Tests + Practical Tasks |
| 11. Infrastructure                                                                                                                                                                                                                                                             |       |                                     |                                          |                   |                         |
| Required Textbooks                                                                                                                                                                                                                                                             |       |                                     | Available in the college library.        |                   |                         |
| Main References (Sources)                                                                                                                                                                                                                                                      |       |                                     | Available in the college library.        |                   |                         |
| Recommended Books and References (Scientific Journals, Reports)                                                                                                                                                                                                                |       |                                     | Scientific journals, reports, etc.       |                   |                         |
| Electronic References and Websites                                                                                                                                                                                                                                             |       |                                     | Internet network.                        |                   |                         |
| 12. Course Development Plan                                                                                                                                                                                                                                                    |       |                                     |                                          |                   |                         |
| <ul style="list-style-type: none"><li>• Develop curricula aligned with labor market needs.</li><li>• Organize scientific seminars and conferences to update academic content.</li><li>• Stay up to date with scientific developments in the field of specialization.</li></ul> |       |                                     |                                          |                   |                         |

## Course Description Form\website design

|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Website Design                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 2. Course Code:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| ELM302                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 3. Semester / Year:                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Spring Semester / Academic Year 2026                                |                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 4. Description Preparation Date:                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| July 1, 2026                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 5. Available Attendance Forms:                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| In-Person (Face-to-Face)                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 6. Number of Credit Hours (Total) / Number of Units (Total)         |                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 75 Hours                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 7. Course administrator's name (mention all, if more than one name) |                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Name: Reem Qays Abduljabber<br>Email: reem.qays@ntu.edu.iq          |                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 8. 9                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Course Objectives</b>                                            | <p>By the end of this course, students will be able to:</p> <ul style="list-style-type: none"> <li>Understand the fundamental concepts and principles of web design.</li> <li>Apply HTML and CSS to create structured and visually styled web pages.</li> <li>Use JavaScript basics to add interactivity and enhance user experience</li> <li>Analyze and evaluate the structure, design, and functionality of existing websites.</li> </ul> |

| 9. Teaching and Learning Strategies |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                     |                                                                                                  |                         |                                            |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------|--------------------------------------------|
| Strategy                            | <p><b>Lectures:</b> To introduce theoretical foundations of web design and development.</p> <p><b>Hands-on Lab Sessions:</b> Practical exercises using HTML, CSS, and JavaScript.</p> <p><b>Group Work and Collaboration:</b> Encouraging teamwork and communication skills</p> <p><b>Demonstrations and Live Coding:</b> Instructor-led coding in real time to model best practices.</p> <p><b>Online Resources and Tutorials:</b> Supplementing in-class material with guided self-study.</p> <p><b>Continuous Feedback:</b> Through quizzes, assignments, and in-class participation</p> |                                     |                                                                                                  |                         |                                            |
| 10. Course Structure                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                     |                                                                                                  |                         |                                            |
| Week                                | Hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Required Learning Outcomes          | Unit or subject name                                                                             | Learning method         | Evaluation method                          |
| 1                                   | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Knowledge and practical application | Introduction to web design and languages used: HTML, CSS, and JavaScript                         | Lectures and discussion | Interaction and participation              |
| 2                                   | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Knowledge and practical application | Introduction to HTML, its history, fundamentals, and introduction to the development environment | Lectures and discussion | Interaction and participation              |
| 3                                   | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Knowledge and practical application | Understanding HTML elements, attributes, and the use of heading and paragraph tags               | Lectures and discussion | Interaction, participation, and daily quiz |

|    |   |                                     |                                                                                                                                |                                                 |                                                       |
|----|---|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-------------------------------------------------------|
| 4  | 5 | Knowledge and practical application | Using the style attribute to format text and background colors, text alignment, use of comments, and understanding color codes | Lectures and practical application              | Interaction, participation, and pop quiz              |
| 5  | 5 | Knowledge and practical application | Creating hyperlinks to other pages, adding images, adjusting image dimensions, and understanding image attributes              | Lectures and discussion                         | Interaction, participation, and practical application |
| 6  | 5 | Knowledge and practical application | Adding tables to a page, working with table elements, and adding ordered and unordered lists                                   | Lectures, discussion, and practical application | Interaction, participation, and assignments           |
| 7  | 5 | Knowledge and practical application | Embedding audio and video files into the page, and introduction to web forms                                                   | Lectures, discussion, and practical application | Interaction, participation, and assignments           |
| 8  | 5 | Knowledge and practical application | Introduction to CSS and methods of applying it to web pages                                                                    | Lectures, discussion, and practical application | Interaction, participation, and midterm exam          |
| 9  | 5 | Knowledge and practical application | Introduction to JavaScript, how to integrate it within HTML, and using output statements                                       | Lectures, discussion, and practical application | Interaction, participation, and assignments           |
| 10 | 5 | Knowledge and practical application | Understanding basic programming terms and how to construct statements                                                          | Lectures, discussion, and practical application | Interaction, participation, and assignments           |
| 11 | 5 | Knowledge and                       | Understanding JavaScript syntax, the                                                                                           | Lectures and                                    | Interaction, participation,                           |

|    |   |                                     |                                                                                                  |                                                 |                               |
|----|---|-------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------|-------------------------------|
|    |   | practical application               | role of comments, and how to write them                                                          | discussion                                      | assignments, and daily quiz   |
| 12 | 5 | Knowledge and practical application | (Topic not specified – can be used for project work, revision, or advanced topic)                | Lectures, discussion, and practical application | Interaction and participation |
| 13 | 5 | Knowledge and practical application | Introduction to variables, data types, variable declaration, and mathematical/logical operations | Lectures, discussion, and practical application | Interaction and participation |
| 14 | 5 | Knowledge and practical application | Understanding conditional statements, loops, and functions                                       | Lectures, discussion, and practical application | Interaction and participation |

## 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

## 12. Learning and Teaching Resources

|                                                                    |                                                                                                                                                                     |
|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any)                      |                                                                                                                                                                     |
| Main references (sources)                                          | HTML, J. D. (2017). CSS: Design and Build Website<br><br>Duckett, J. (2014). <i>Javascript and jquery: Interactive front-end web development</i> . Wiley Publishing |
| Recommended books and references (scientific journals, reports...) | Scientific Journals in Information Technology Specializations                                                                                                       |
| Electronic References, Websites                                    | www.w3school.com                                                                                                                                                    |

## Course Description Form

|                                                                     |                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                     |                                                                                                                                                                                                                                                                                                                                                |
| Mobile Programming Techniques                                       |                                                                                                                                                                                                                                                                                                                                                |
| 2. Course Code:                                                     |                                                                                                                                                                                                                                                                                                                                                |
| ELM316                                                              |                                                                                                                                                                                                                                                                                                                                                |
| 3. Semester / Year:                                                 |                                                                                                                                                                                                                                                                                                                                                |
| Fall Semester/ 2026                                                 |                                                                                                                                                                                                                                                                                                                                                |
| Description Preparation Date:                                       |                                                                                                                                                                                                                                                                                                                                                |
| 1/9/2025                                                            |                                                                                                                                                                                                                                                                                                                                                |
| 5. Available Attendance Forms:                                      |                                                                                                                                                                                                                                                                                                                                                |
| In-person                                                           |                                                                                                                                                                                                                                                                                                                                                |
| 6. Number of Credit Hours (Total) / Number of Units (Total)         |                                                                                                                                                                                                                                                                                                                                                |
| 60 hours                                                            |                                                                                                                                                                                                                                                                                                                                                |
| 7. Course administrator's name (mention all, if more than one name) |                                                                                                                                                                                                                                                                                                                                                |
| Name: Noor Nabeel Hazim<br>Email: noor.nabeel@ntu.edu.iq            |                                                                                                                                                                                                                                                                                                                                                |
| 8. Course Objectives                                                |                                                                                                                                                                                                                                                                                                                                                |
| <b>Course Objectives</b>                                            | <b>The Mobile Programming Techniques</b><br>course aims to enable students to acquire the basic and advanced skills and knowledge for designing and developing smartphone applications.                                                                                                                                                        |
| 9. Teaching and Learning Strategies                                 |                                                                                                                                                                                                                                                                                                                                                |
| <b>Strategy</b>                                                     | <b>Course Outcomes</b><br>1. Introduce students to the basics of smartphone operating systems, with a focus on Android and/or iOS.<br><br>2. Empower students to design effective and engaging user interfaces using appropriate tools.<br><br>3. Train students in using integrated development environments such as Android Studio or Xcode. |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>4. Enable students to develop mobile applications capable of interacting with device components (such as the camera, GPS, the internet, etc.).</p> <p>5. Provide students with skills in working with local and cloud databases within mobile applications.</p> <p>6. Enhance students' abilities to test, detect, and debug applications.</p> <p>7. Introduce students to the principles of application security and access rights.</p> <p>8. Prepare students to upload applications to app stores and meet publishing requirements.</p> <p>Teaching and Learning Methods</p> <ul style="list-style-type: none"> <li>- Direct instruction (lecture) with the use of educational technology tools</li> <li>- Classroom discussion and interaction through assignments</li> <li>- Learning through practical application of materials requiring departmental laboratories</li> <li>- Project-based learning strategy</li> </ul> <p>Assessment Methods</p> <ul style="list-style-type: none"> <li>* Periodic tests</li> <li>* Surprise tests</li> <li>* Classroom interaction and participation</li> <li>* Research assignments and reports</li> <li>* Practical and applied tests</li> </ul> |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 10. Course Structure

| Week | Hours | Required Learning Outcomes                              | Unit or subject name                           | Learning method         | Evaluation method             |
|------|-------|---------------------------------------------------------|------------------------------------------------|-------------------------|-------------------------------|
| 1    | 4     | General concepts of applications (Native, Hybrid, Web). | Introduction to Mobile Application Programming | Lectures and Discussion | Interaction and participation |

|    |   |                                                                                                                                                  |                                                                        |                                                 |                                                     |
|----|---|--------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-------------------------------------------------|-----------------------------------------------------|
|    |   |                                                                                                                                                  |                                                                        |                                                 |                                                     |
| 2  | 4 | Overview of Android and IOS, difference development tools. Smartphone operating systems. Lectures and discussion. Interaction and participation. | Smartphone operating systems                                           | Lectures and Discussion                         | Interaction and participation                       |
| 3  | 4 | Android Studio get familiar with the interface.                                                                                                  | Application development environment                                    | Lectures and Discussion                         | Interaction, participation, and daily testin        |
| 4  | 4 | Manifest, Activities, Resources. Android App Structure: Lectures, Practical Application, Interaction, Participation, and Pop Quiz.               | Android application structure                                          | Lectures and Practical Application              | Interact and Participate, and Surprise Quiz         |
| 5  | 4 | Interface elements, layouts, navigat between screens.                                                                                            | User Interface Design: Interface Elements, Layouts, Screen Navigation. | Lectures and Discussion                         | Interaction, Participation, and Quarterly Quiz      |
| 6  | 4 | Activity Lifecycle and Event Handling.                                                                                                           | Activity Lifecycle and Event Handling.                                 | Lectures and Discussion                         | Interaction, Participation, and Repot               |
| 7  | 4 | Use Shared Preferences and internal and external storage files.                                                                                  | Local storage                                                          | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments         |
| 8  | 4 | Using SQLite                                                                                                                                     | Databases in mobile                                                    | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments         |
| 9  | 4 | Sending and receiving data using HTTP/JSON                                                                                                       | Internet connectivity and APIs                                         | Lectures, Discussion, and Practical Application | Presenting and Explaining Repo Through Presentation |
| 10 | 4 | Handling camera, GPS,                                                                                                                            | Mobile phone services                                                  | Lectures, Discussion, and                       | Interaction, Participation, and                     |



|    |   |                                                           |                                                         |                                                 |                                                        |
|----|---|-----------------------------------------------------------|---------------------------------------------------------|-------------------------------------------------|--------------------------------------------------------|
|    |   | maps, communication                                       |                                                         | Practical Application                           | Assignments                                            |
| 11 | 4 | Background Services                                       | Notifications                                           | Lectures, Discussion, and Practical Application | Daily Quiz                                             |
| 12 | 4 | Prepare APK files, sign, and publish them on Google Play. | Deploy apps                                             | Lectures, Discussion, and Practical Application | Interaction and Participation                          |
| 13 | 4 | Permissions, data protection , and user verification.     | Security concepts in mobile applications                | Lectures, Discussion, and Practical Application | Reports                                                |
| 14 | 4 | Presentation and evaluation of students' final projects.  | Practical projects                                      | Practical Application                           | Presenting and explaining reports through presentation |
| 15 | 4 | Comprehensive review and preparation for the final exam   | Comprehensive Review and Preparation for the Final Exam | Discussion and Practical Application            | Interaction and participation                          |

### 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

### 12. Learning and Teaching Resources

|                                                                    |                                                                                                                                                                              |
|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any)                      |                                                                                                                                                                              |
| Main references (sources)                                          | Publications on mobile programming techniques are available in the college library and the university's central library.                                                     |
| Recommended books and references (scientific journals, reports...) | Neil Smyth, Android Studio 4.2 Development Essentials – Java Edition                                                                                                         |
| Electronic References, Websites                                    | <a href="https://kotlinlang.org/docs/home.html">https://kotlinlang.org/docs/home.html</a><br><a href="https://firebase.google.com/docs">https://firebase.google.com/docs</a> |

## New Course Description Form / Internet Technology 2

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Educational institution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Mosul Technical Administrative College                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 2. Scientific Department / Center                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Information Technology Management Department/Third Level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 3. Course Name/Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Internet Technology 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 4. Available attendance forms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| weekly                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 5. semester/year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Spring semester/2026                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 6. Number of study hours (total)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 60 hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 7. Date this description was prepared                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 1/9/2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 8. Course objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| -Providing students with basic concepts of management information systems.<br>-Knowing the different types of systems that serve administrative levels.<br>-Learn the mechanism of analyzing and designing information systems.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 9. Course outcomes, teaching, learning and assessment methods                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>A- Cognitive objectives</b><br><br>- Understanding and Analyzing Networks: The student will be able to understand the basic components of management information systems (MIS) and identify their vital role in supporting organizational decision-making. This includes the ability to analyze existing systems, identify their strengths and weaknesses, and suggest necessary improvements to increase efficiency and effectiveness.<br><br>- Applying Technological Concepts: The student will acquire the ability to link the theoretical concepts of management information systems to contemporary technological applications. This includes an understanding of modern technologies such as cloud computing and big data analytics, and how they can be employed to achieve organizational strategic goals. |

## B - Course specific skill objectives.

- Problem solving skills using the Internet: The student will develop the ability to identify organizational problems that can be solved or mitigated using information systems, and to propose innovative technology-based solutions, with a focus on operational efficiency and improved decision-making.
- Systems analysis and design skills: The student will acquire the ability to analyze the functional and non-functional requirements of a new information system, and design appropriate solutions using systems modeling tools and techniques such as data flow diagrams (DFD) and entity-relationship diagrams (ERD), which qualifies him to be an effective link between business and technical teams.

### Teaching and learning methods

- Direct instruction (lecture) with the use of educational technology tools
- Class discussion and interaction through assignment of homework
- Education by practical application of subjects that require department laboratories
- Project-based learning strategy

### Evaluation methods

\*Periodic tests

\*Surprise tests

\*Classroom interaction and participation

\*Research assignments and reports

\*Practical and applied tests

## C- Emotional and value-based goals

A1- Enhancing the spirit of belonging to a team within the organization and the desire to provide the best.

A2- Enhancing the desire to compete to raise the educational level

A3- Enhancing the sense of belonging to the specialty and developing the desire to work in information institutions.

### Teaching and learning methods

1. Periodic field visits to administrative and technical institutions.

2. Coexistence, actual practice, and interaction with workers through practical application (summer training) that the student undertakes by living with the beneficiaries.

3. Psychological and emotional stimulation through open and direct discussions with students.

D - General and transferable skills (other skills related to employability and personal development).

D1- Teaching the student the skills of writing research and reports.

D2- Teaching the student how to link the theoretical aspect with the practical application that he will practice at work.

D3- Teaching the student how to deal with information sources, analyze them, and deduce and record a summary of the information he obtains as a result of the objective analysis of these sources.

D4- Teaching the student how to design databases and websites and implement programs to serve various scientific fields.

#### 10. Course structure

| Evaluation method                     | Teaching method         | Unit name/topic                                         | Required learning outcomes          | watches | week       |
|---------------------------------------|-------------------------|---------------------------------------------------------|-------------------------------------|---------|------------|
| Interaction and participation         | Lectures and discussion | General introduction, basic concepts, working protocols | Knowledge and practical application | 4       | the first  |
| Interaction and participation         | Lectures and discussion | Address Resolution Protocol (ARP)                       | Knowledge and practical application | 4       | the second |
| Interact, participate and test daily. | Lectures and discussion | STATICS/dynamic mapping                                 | Knowledge and practical application | 4       | the third  |
| Interaction, engagement, and          | Lectures and practical  | Logical address                                         | Knowledge and practical             | 4       | Fourth     |

|                                                        |                                                |                                           |                                     |   |            |
|--------------------------------------------------------|------------------------------------------------|-------------------------------------------|-------------------------------------|---|------------|
| pop-up testing                                         | application                                    |                                           | application                         |   |            |
| Interaction, participation, and semester testing       | Lectures and discussion                        | Physical address                          | Knowledge and practical application | 4 | Fifth      |
| Interaction, Participation, and Reports                | Lectures, discussion and practical application | Revise Address Resolution Protocol (RARP) | Knowledge and practical application | 4 | Sixth      |
| Interaction, participation, and duties                 | Lectures, discussion and practical application | Protocol suite                            | Knowledge and practical application | 4 | Seventh    |
| Interaction, participation, and duties                 | Lectures, discussion and practical application | Packet format                             | Knowledge and practical application | 4 | The eighth |
| Delivering and explaining reports through presentation | Lectures, discussion and practical application | Request replay                            | Knowledge and practical application | 4 | Ninth      |
| Interaction, participation, and duties                 | Lectures, discussion and practical application | Encapsulation                             | Knowledge and practical application | 4 | tenth      |
| Daily test                                             | Lectures and discussion                        | Routing table                             | Knowledge and practical application | 4 | eleventh   |
| Interaction and participation                          | Lectures and discussion                        | Email Architecture                        | Knowledge and practical application | 4 | twelfth    |

|                                                        |                         |                           |                                     |   |            |
|--------------------------------------------------------|-------------------------|---------------------------|-------------------------------------|---|------------|
| Reports                                                | Lectures and discussion | MTA client/<br>MTA Server | Knowledge and practical application | 4 | thirteenth |
| Delivering and explaining reports through presentation | Practical application   | Message Access Agents     | Knowledge and practical application | 4 | fourteenth |
| Interaction and participation                          | Lectures and discussion | Push and pull user        | Knowledge and practical application | 4 | fifteenth  |

|                       |                                     |                    |  |  |  |
|-----------------------|-------------------------------------|--------------------|--|--|--|
| Internet Technology 1 | Knowledge and practical application | 11. infrastructure |  |  |  |
|-----------------------|-------------------------------------|--------------------|--|--|--|

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| computer networks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1- Required textbooks                                                    |
| Private publications for computer networks and communications<br>Available at the college library and the university's central library                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2- Main references (sources)                                             |
| Mohammed Abdel Qader Mohammed Omar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | A- Recommended books and references (scientific journals, reports, etc.) |
| websites                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | B - Electronic references, websites...                                   |
| 12. Curriculum Development Plan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                          |
| The development plan for this course aims to update the content by incorporating the latest developments in networking and communications technology, such as the type of origin, networks, associated devices, capacity, speed, and pros and cons, to enhance students' understanding of basic concepts and their practical applications. The plan will focus on adding real-life case studies and practical exercises to train students in analyzing and solving problems using Internet installation and management software, while developing their skills. The teaching methods used will also be evaluated to ensure they align with the desired learning outcomes and provide a more interactive and engaging learning experience for students. |                                                                          |

## New Course Description Form / Internet technology1

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Educational institution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Mosul Technical Administrative College                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2. Scientific Department / Center                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Information Technology Management Department/Third Level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 3. Course Name/Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Internet technology1/ELM307                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 4. Available attendance forms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Weekly                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 5. semester/year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Fall semester/2026                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 6. Number of study hours (total)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 60 hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 7. Date this description was prepared                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 1/9/2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 8. Course objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| -Providing students with basic concepts of management information systems.<br>-Knowing the different types of systems that serve administrative levels.<br>-Learn the mechanism of analyzing and designing information systems.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 9. Course outcomes, teaching, learning and assessment methods                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>A- Cognitive objectives</b><br><br>- Understanding and Analyzing Networks: The student will be able to understand the basic components of management information systems (MIS) and identify their vital role in supporting organizational decision-making. This includes the ability to analyze existing systems, identify their strengths and weaknesses, and suggest necessary improvements to increase efficiency and effectiveness.<br><br>- Applying Technological Concepts: The student will acquire the ability to link the theoretical concepts of management information systems to contemporary technological applications. This includes an understanding of modern technologies such as cloud computing and big data analytics, and |

how they can be employed to achieve organizational strategic goals.

B - Course specific skill objectives.

- Problem solving skills using the Internet: The student will develop the ability to identify organizational problems that can be solved or mitigated using information systems, and to propose innovative technology-based solutions, with a focus on operational efficiency and improved decision-making.

- Systems analysis and design skills: The student will acquire the ability to analyze the functional and non-functional requirements of a new information system, and design appropriate solutions using systems modeling tools and techniques such as data flow diagrams (DFD) and entity-relationship diagrams (ERD), which qualifies him to be an effective link between business and technical teams.

Teaching and learning methods

- Direct instruction (lecture) with the use of educational technology tools
- Class discussion and interaction through assignment of homework
- Education by practical application of subjects that require department laboratories
- Project-based learning strategy

Evaluation methods

\*Periodic tests

\*Surprise tests

\*Classroom interaction and participation

\*Research assignments and reports

\*Practical and applied tests

C- Emotional and value-based goals

A1- Enhancing the spirit of belonging to a team within the organization and the desire to provide the best.

A2- Enhancing the desire to compete to raise the educational level

A3- Enhancing the sense of belonging to the specialty and developing the desire to work in information institutions.



### Teaching and learning methods

1. Periodic field visits to administrative and technical institutions.
2. Coexistence, actual practice, and interaction with workers through practical application (summer training) that the student undertakes by living with the beneficiaries.
3. Psychological and emotional stimulation through open and direct discussions with students.

D - General and transferable skills (other skills related to employability and personal development).

D1- Teaching the student the skills of writing research and reports.

D2- Teaching the student how to link the theoretical aspect with the practical application that he will practice at work.

D3- Teaching the student how to deal with information sources, analyze them, and deduce and record a summary of the information he obtains as a result of the objective analysis of these sources.

D4- Teaching the student how to design databases and websites and implement programs to serve various scientific fields.

### 10. Course structure

| Evaluation method                     | Teaching method         | Unit name/topic                                                         | Required learning outcomes          | watches | week       |
|---------------------------------------|-------------------------|-------------------------------------------------------------------------|-------------------------------------|---------|------------|
| Interaction and participation         | Lectures and discussion | General introduction, basic concepts, network and communication systems | Knowledge and practical application | 4       | the first  |
| Interaction and participation         | Lectures and discussion | Networks, their need, types, and network architecture                   | Knowledge and practical application | 4       | the second |
| Interact, participate and test daily. | Lectures and discussion | modeliOS                                                                | Knowledge and practical             | 4       |            |

|                                                       |                                                |                                    |                                     |   |            |
|-------------------------------------------------------|------------------------------------------------|------------------------------------|-------------------------------------|---|------------|
|                                                       |                                                |                                    | application                         |   | the third  |
| Interaction, engagement, and pop-up testing           | Lectures and practical application             | Networking devices and accessories | Knowledge and practical application | 4 | Fourth     |
| Interaction, participation, and semester testing      | Lectures and discussion                        | Network protocols                  | Knowledge and practical application | 4 | Fifth      |
| Interaction, Participation, and Reports               | Lectures, discussion and practical application | Network cardNIC                    | Knowledge and practical application | 4 | Sixth      |
| Interaction, participation, and duties                | Lectures, discussion and practical application | Types of HUB                       | Knowledge and practical application | 4 | Seventh    |
| Interaction, participation, and duties                | Lectures, discussion and practical application | Application layer                  | Knowledge and practical application | 4 | The eighth |
| Delivering and explaining reports throughpresentation | Lectures, discussion and practical application | Presentation and session layers    | Knowledge and practical application | 4 | Ninth      |
| Interaction, participation, and duties                | Lectures, discussion and practical application | Transport layer                    | Knowledge and practical application | 4 | tenth      |
| Daily test                                            | Lectures and discussion                        | Network layer                      | Knowledge and practical application | 4 | eleventh   |
| Interaction and participation                         | Lectures and discussion                        | Data link layer                    | Knowledge and practical             | 4 |            |

|                                                        |                         |                |                                     |   |            |
|--------------------------------------------------------|-------------------------|----------------|-------------------------------------|---|------------|
|                                                        |                         |                | application                         |   | twelfth    |
| Reports                                                | Lectures and discussion | Physical layer | Knowledge and practical application | 4 | thirteenth |
| Delivering and explaining reports through presentation | Practical application   | Routers        | Knowledge and practical application | 4 | fourteenth |
| Interaction and participation                          | Lectures and discussion | Gateways       | Knowledge and practical application | 4 | fifteenth  |

|                       |                                     |                    |
|-----------------------|-------------------------------------|--------------------|
| Internet Technology 1 | Knowledge and practical application | 11. infrastructure |
|-----------------------|-------------------------------------|--------------------|

|                                                                                                                                     |                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| computer networks                                                                                                                   | 1- Required textbooks                                                    |
| Private publications for computer networks and communications Available at the college library and the university's central library | 2- Main references (sources)                                             |
| Mohammed Abdel Qader Mohammed Omar                                                                                                  | A- Recommended books and references (scientific journals, reports, etc.) |
| websites                                                                                                                            | B - Electronic references, websites...                                   |

#### 12. Curriculum Development Plan

The development plan for this course aims to update the content by incorporating the latest developments in networking and communications technology, such as the type of origin, networks, associated devices, capacity, speed, and pros and cons, to enhance students' understanding of basic concepts and their practical applications. The plan will focus on adding real-life case studies and practical exercises to train students in analyzing and solving problems using Internet installation and management software, while developing their skills. The teaching methods used will also be evaluated to ensure they align with the desired learning outcomes and provide a more interactive and engaging learning experience for students.

## Course Description Form\digital image processing

|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                 |
| Digital image processing                                            |                                                                                                                                                                                                                                                                                                                                                                                                 |
| 2. Course Code:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                 |
| ELM312                                                              |                                                                                                                                                                                                                                                                                                                                                                                                 |
| 3. Semester / Year:                                                 |                                                                                                                                                                                                                                                                                                                                                                                                 |
| Fall Semester / Academic Year 2024–2025                             |                                                                                                                                                                                                                                                                                                                                                                                                 |
| 4. Description Preparation Date:                                    |                                                                                                                                                                                                                                                                                                                                                                                                 |
| July 1, 2025                                                        |                                                                                                                                                                                                                                                                                                                                                                                                 |
| 5. Available Attendance Forms:                                      |                                                                                                                                                                                                                                                                                                                                                                                                 |
| In-Person (Face-to-Face)                                            |                                                                                                                                                                                                                                                                                                                                                                                                 |
| 6. Number of Credit Hours (Total) / Number of Units (Total)         |                                                                                                                                                                                                                                                                                                                                                                                                 |
| 60 Hours                                                            |                                                                                                                                                                                                                                                                                                                                                                                                 |
| 7. Course administrator's name (mention all, if more than one name) |                                                                                                                                                                                                                                                                                                                                                                                                 |
| Name: Reem Qays Abduljabber<br>Email: reem.qays@ntu.edu.iq          |                                                                                                                                                                                                                                                                                                                                                                                                 |
| 8. 9                                                                |                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Course Objectives</b>                                            | <p>Understand the fundamental concepts and principles of digital image processing, including image representation, acquisition, and storage.</p> <p>Analyze the different types and formats of digital images and their properties.</p> <p>Apply basic techniques for image enhancement in both spatial and frequency domains.</p> <p>Use mathematical and logical operations to manipulate</p> |

|  |                                                                                                                                                                                                                                                                                                                            |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>digital images.</p> <p>Employ filtering techniques to reduce noise, smooth, and sharpen images.</p> <p>Understand and apply histogram-based methods such as histogram equalization and contrast stretching.</p> <ul style="list-style-type: none"> <li>• Develop skills in using software tools like MATLAB.</li> </ul> |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 9. Teaching and Learning Strategies

|         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strateg | <ul style="list-style-type: none"> <li>• <b>Lectures (Theoretical):</b><br/>To introduce and explain the fundamental principles, mathematical concepts, and algorithms used in digital image processing.</li> <li>• <b>Laboratory Sessions (Practical):</b><br/>Students will use software tools such as MATLAB to implement and test various image processing techniques.</li> <li>• <b>Demonstrations:</b><br/>Live coding sessions by the instructor to walk students through algorithm implementation and real-time image analysis.</li> <li>• <b>Problem-Based Learning (PBL):</b><br/>Real-world image problems will be presented for students to analyze and solve using suitable methods.</li> <li>• <b>Project-Based Learning:</b><br/>Students will develop a small project involving tasks like enhancement, filtering, and analysis of images, encouraging independent learning.</li> <li>• <b>Blended Learning :</b><br/>Supplementing in-person instruction with online materials such as video tutorials, articles, and interactive simulations.</li> <li>• <b>Formative Feedback:</b><br/>Continuous assessment through quizzes, assignments, and feedback on lab work t</li> </ul> |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

guide students' progress.

## 10. Course Structure

| Week | Hours | Required Learning Outcomes          | Unit or subject name                                                                                                          | Learning method           | Evaluation method                 |
|------|-------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|---------------------------|-----------------------------------|
| 1    | 5     | Knowledge and practical application | Introduction to Digital Image Processing                                                                                      | Theoretical and Practical | Student participation and quizzes |
| 2    | 5     | Knowledge and practical application | Image acquisition: definition of a digital image, how it is represented and captured, understanding sampling and quantization | Theoretical and Practical | Student participation and quizzes |
| 3    | 5     | Knowledge and practical application | Types of digital images and common image file formats                                                                         | Theoretical and Practical | Student participation and quizzes |
| 4    | 5     | Knowledge and practical application | Reading digital images using MATLAB, converting image types, and saving images after modification                             | Theoretical and Practical | Student participation and quizzes |
| 5    | 5     | Knowledge and practical application | Performing arithmetic and logical operations on digital images using MATLAB                                                   | Theoretical and Practical | Student participation and quizzes |
| 6    | 5     | Knowledge and practical application | Image enhancement in the spatial domain using transformation functions                                                        | Theoretical and Practical | Student participation and quizzes |
| 7    | 5     | Knowledge and practical application | Applying image enhancement functions using                                                                                    | Theoretical and Practical | Student participation and quizzes |

|    |   |                                     |                                                                                                       |                           |                                   |
|----|---|-------------------------------------|-------------------------------------------------------------------------------------------------------|---------------------------|-----------------------------------|
|    |   |                                     | MATLAB                                                                                                |                           |                                   |
| 8  | 5 | Knowledge and practical application | Understanding histograms in digital imaging: how to calculate, interpret, and apply them using MATLAB | Theoretical and Practical | Student participation and quizzes |
| 9  | 5 | Knowledge and practical application | Learning two methods (methods not specified—please clarify)                                           | Theoretical and Practical | Student participation and quizzes |
| 10 | 5 | Knowledge and practical application | Full-scale contrast stretching and histogram equalization                                             | Theoretical and Practical | Student participation and quizzes |
| 11 | 5 | Knowledge and practical application | Techniques for enhancing digital images (continued)                                                   | Theoretical and Practical | Student participation and quizzes |
| 12 | 5 | Knowledge and practical application | Applying contrast stretching and histogram equalization using MATLAB                                  | Theoretical and Practical | Student participation and quizzes |
| 13 | 5 | Knowledge and practical application | Introduction to spatial filtering and its basic concepts, and how to apply it to digital images       | Theoretical and Practical | Student participation and quizzes |
| 14 | 5 | Knowledge and practical application | Smoothing linear filters                                                                              | Theoretical and Practical | Student participation and quizzes |
| 15 | 5 | Knowledge and practical application | Order statistics filters                                                                              | Theoretical and Practical | Student participation and quizzes |

## 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

## 12. Learning and Teaching Resources

|                                                                    |                                                                                                                                                                                                                                       |
|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any)                      |                                                                                                                                                                                                                                       |
| Main references (sources)                                          | <p>R. C. Gonzalez and R. E. Woods, 'Digital Image Processing', 3rd Edition, Prentice Hall, 2008</p> <p>2. Rafael C. Gonzalez, Richard E. Woods, and Steven L. Eddins, "Digital Image Processing Using MATLAB", Prentice Hall 2008</p> |
| Recommended books and references (scientific journals, reports...) | Scientific Journals in Information Technology Specializations                                                                                                                                                                         |
| Electronic References, Websites                                    | <a href="http://www.mathworks.com">www.mathworks.com</a>                                                                                                                                                                              |



## Course Description Form- Operating Systems

|                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. Course Name:</b>                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Operating Systems                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>2. Course Code:</b>                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| ELM313                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>3. Semester / Year:</b>                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Spring Semester /2026                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Description Preparation Date:</b>                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 1/9/2025                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>5. Available Attendance Forms:</b>                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| In-person                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 60 hours                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>7. Course administrator's name (mention all, if more than one name)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Radhwan Yousif Al-jawadi (radwan.aljawadi@ntu.edu.iq)                      |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>8. Course Objectives</b>                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Course Objectives</b>                                                   | <p><b>This course aims to introduce students to the fundamental concepts of operating systems and their role in managing computer resources such as CPU, memory, I/O devices, and file systems. It also aims to equip students with an understanding of scheduling algorithms, process management, concurrency handling, and problem-solving in these areas, along with hands-on practice in various operating system environments.</b></p> |
| <b>9. Teaching and Learning Strategies</b>                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Strategy</b>                                                            | <p><b>1. Knowledge</b></p> <ul style="list-style-type: none"> <li>-Understand the fundamental concepts, functions, and types of operating systems.</li> <li>-Recognize process management, scheduling, memory management, file systems, and I/O device management.</li> </ul> <p><b>2. Skills</b></p> <ul style="list-style-type: none"> <li>-Apply CPU scheduling algorithms and memory management techniques in</li> </ul>                |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>practice.</p> <p>-Use operating system commands (e.g., Linux) to create and manage processes and files.</p> <p>Analyze operating system performance, identify concurrency issues, and propose solutions.</p> <p>3. Application</p> <p>-Solve practical problems in real or virtual operating system environments.</p> <p>-Integrate operating system concepts with application and system programming.</p> <p>-Develop and implement small-scale projects that utilize operating system techniques.</p> |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 10. Course Structure

| Week | Hours | Required Learning Outcomes                            | Unit or subject name                      | Learning method                    | Evaluation method                              |
|------|-------|-------------------------------------------------------|-------------------------------------------|------------------------------------|------------------------------------------------|
| 1    | 4     | Introduction to Operating Systems – Functions & Types | Basic Linux commands                      | Lectures and Discussion            | Interaction and participation                  |
| 2    | 4     | Processes and Threads                                 | Creating & managing processes in Linux    | Lectures and Discussion            | Interaction and participation                  |
| 3    | 4     | CPU Scheduling Algorithms                             | Simulating scheduling algorithms          | Lectures and Discussion            | Interaction, participation, and daily testin   |
| 4    | 4     | Process Synchronization                               | Implementing synchronization with threads | Lectures and Practical Application | Interact and Participate, and a Surprise Quiz  |
| 5    | 4     | Race Conditions & Critical Sections                   | Producer–Consumer problem                 | Lectures and Discussion            | Interaction, Participation, and Quarterly Quiz |
| 6    | 4     | Memory Management – Paging & Segmentation             | Page replacement simulation               | Lectures and Discussion            | Interaction, Participation, and Repot          |

|    |   |                                         |                                      |                                                 |                                                          |
|----|---|-----------------------------------------|--------------------------------------|-------------------------------------------------|----------------------------------------------------------|
| 7  | 4 | Page Replacement Algorithms             | Midterm practical review             | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments              |
| 8  | 4 | File Systems                            | File creation/read/write programming | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments              |
| 9  | 4 | Secondary Storage Management            | Block allocation simulation          | Lectures, Discussion, and Practical Application | Presenting and Explaining Reports Through Presentation   |
| 10 | 4 | I/O Systems                             | I/O scheduling experiment            | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments              |
| 11 | 4 | Security & Protection                   | Access control program               | Lectures, Discussion, and Practical Application | Daily Quiz                                               |
| 12 | 4 | Modern OS Comparison – Linux vs Windows | Command comparison Linux vs Windows  | Lectures, Discussion, and Practical Application | Interaction and Participation                            |
| 13 | 4 | Case Studies on OS                      | Mini project implementation          | Lectures, Discussion, and Practical Application | Reports                                                  |
| 14 | 4 | Review of Core Topics                   | Lab review                           | Lectures, Discussion, and Practical Application | Presenting and explaining reports through a presentation |
| 15 | 4 | Final Exam                              | Final practical exam                 |                                                 |                                                          |

### 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

### 12. Learning and Teaching Resources

|                                               |                                                         |
|-----------------------------------------------|---------------------------------------------------------|
| Required textbooks (curricular books, if any) |                                                         |
| Main references (sources)                     | Silberschatz, Galvin, Gagne – Operating System Concepts |

|                                                                       |                                                                                                                                                                                                                                  |
|-----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                       | Andrew S. Tanenbaum – Modern Operating Systems                                                                                                                                                                                   |
| Recommended books and references<br>(scientific journals, reports...) |                                                                                                                                                                                                                                  |
| Electronic References, Websites                                       | <a href="https://www.geeksforgeeks.org/operating-systems/">https://www.geeksforgeeks.org/operating-systems/</a><br><a href="https://www.tutorialspoint.com/operating_system">https://www.tutorialspoint.com/operating_system</a> |

## Course Description Form

|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                             |
| Management Information Systems                                      |                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2. Course Code:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                             |
| ELM308                                                              |                                                                                                                                                                                                                                                                                                                                                                                                             |
| 3. Semester / Year:                                                 |                                                                                                                                                                                                                                                                                                                                                                                                             |
| Spring Semester/2026                                                |                                                                                                                                                                                                                                                                                                                                                                                                             |
| Description Preparation Date:                                       |                                                                                                                                                                                                                                                                                                                                                                                                             |
| 1/9/2025                                                            |                                                                                                                                                                                                                                                                                                                                                                                                             |
| 5. Available Attendance Forms:                                      |                                                                                                                                                                                                                                                                                                                                                                                                             |
| In-person                                                           |                                                                                                                                                                                                                                                                                                                                                                                                             |
| 6. Number of Credit Hours (Total) / Number of Units (Total)         |                                                                                                                                                                                                                                                                                                                                                                                                             |
| 60 hours                                                            |                                                                                                                                                                                                                                                                                                                                                                                                             |
| 7. Course administrator's name (mention all, if more than one name) |                                                                                                                                                                                                                                                                                                                                                                                                             |
| Name: Noor deah azeez<br>Email:dr.noor.deah@ntu.edu.iq              |                                                                                                                                                                                                                                                                                                                                                                                                             |
| 8. Course Objectives                                                |                                                                                                                                                                                                                                                                                                                                                                                                             |
| Course Objectives                                                   | <ul style="list-style-type: none"> <li>– Providing students with basic concepts of management information systems.</li> <li>– Understanding the different types of systems that serve administrative levels.</li> <li>– Understanding the mechanisms for analyzing and designing information systems.</li> </ul>                                                                                            |
| 9. Teaching and Learning Strategies                                 |                                                                                                                                                                                                                                                                                                                                                                                                             |
| Strategy                                                            | <p>A. Cognitive Objectives</p> <p>- Understanding and Analyzing Systems: The student will be able to understand the basic components of Management Information Systems (MIS) and identify their vital role in supporting organizational decision-making. This includes the ability to analyze existing systems, identify their strengths and weaknesses, and suggest necessary improvements to increase</p> |

efficiency and effectiveness.

- Applying Technological Concepts: The student will acquire the ability to link the theoretical concepts of MIS to contemporary technological applications. This includes an understanding of modern technologies such as cloud computing and Big Data Analytics, and how they can be employed to achieve organizational strategic objectives.

#### B. Course Skill Objectives

- Problem-Solving Skills Using Information Systems: The student will develop the ability to identify organizational problems that can be solved or mitigated using information systems, and to propose innovative technology-based solutions with a focus on operational efficiency and improved decision-making.

- Systems Analysis and Design Skills: The student will acquire the ability to analyze the functional and non-functional requirements of a new information system and design appropriate solutions using systems modeling tools and techniques such as data flow diagrams (DFDs) and entity-relationship diagrams (ERDs), qualifying them to be an effective link between business and technical teams.

#### Teaching and Learning Methods

- Direct instruction (lectures) using educational technology tools
- Classroom discussion and interaction through assignments
- Learning through practical application of materials requiring department laboratories
- Project-Based Learning Strategy

#### Assessment Methods

- \*Periodic Tests
- \*Surprise Tests
- \*Classroom Interaction and Participation
- \*Research Assignments and Reports
- \*Practical and Applied Tests

#### C- Affective and Value-Based Objectives

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>C1- Strengthening the spirit of belonging to a team within the institution and the desire to provide the best</p> <p>C2- Strengthening the desire to compete to raise the educational level</p> <p>C3- Strengthening the sense of belonging to the specialty and developing the desire to work in information institutions</p> <p>Teaching and Learning Methods</p> <p>1. Periodic field visits to administrative and technical institutions</p> <p>2. Experience, actual practice, and interaction with staff through practical application (summer training) conducted by the student in close contact with beneficiaries</p> <p>3. Psychological Motivation and emotionally through open and direct discussions with students.</p> <p>D - General and transferable skills (other skills related to employability and personal development).</p> <p>D1 - Teaching students research and report writing skills.</p> <p>D2 - Teaching students how to connect theoretical knowledge with practical application that they will experience at work.</p> <p>D3 - Teaching students how to access and analyze information sources, and how to derive and document a summary of the information obtained through objective analysis of these sources.</p> <p>D4 - Teaching students how to design databases and websites and implement programs to serve various scientific fields.</p> |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 10. Course Structure

| Week | Hours | Required Learning Outcomes          | Unit or subject name                                                 | Learning method         | Evaluation method             |
|------|-------|-------------------------------------|----------------------------------------------------------------------|-------------------------|-------------------------------|
| 1    | 4     | Knowledge and Practical Application | General Introduction, Basic Concepts, Management Information Systems | Lectures and Discussion | Interaction and participation |

|    |   |                                     |                                                                                          |                                                 |                                                          |
|----|---|-------------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------|----------------------------------------------------------|
| 2  | 4 | Knowledge and Practical Application | Information and its Net Value and Cost of Information                                    | Lectures and Discussion                         | Interaction and participation                            |
| 3  | 4 | Knowledge and Practical Application | Information Production Cycle, Case Study                                                 | Lectures and Discussion                         | Interaction, participation, and daily testing            |
| 4  | 4 | Knowledge and Practical Application | The importance of management information systems, their functions and their limitations. | Lectures and Practical Application              | Interact and Participate, and Surprise Quiz              |
| 5  | 4 | Knowledge and Practical Application | Types of management information systems                                                  | Lectures and Discussion                         | Interaction, Participation, and Quarterly Quiz           |
| 6  | 4 | Knowledge and Practical Application | Automated information systems<br>Case study                                              | Lectures and Discussion                         | Interaction, Participation, and Report                   |
| 7  | 4 | Knowledge and Practical Application | Transaction Processing Systems, Case Study                                               | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments              |
| 8  | 4 | Knowledge and Practical Application | Communication Systems<br>Case Study                                                      | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments              |
| 9  | 4 | Knowledge and Practical Application | Knowledge-Based Business Systems, Case Study                                             | Lectures, Discussion, and Practical Application | Presenting and Explaining Reports Through Presentation   |
| 10 | 4 | Knowledge and Practical Application | Decision Concept, Decision-Making Steps, Simon's Decision-Making Model                   | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments              |
| 11 | 4 | Knowledge and Practical Application | Decision Support Systems                                                                 | Lectures, Discussion, and Practical Application | Daily Quiz                                               |
| 12 | 4 | Knowledge and Practical Application | Group Decision Support Systems                                                           | Lectures, Discussion, and Practical Application | Interaction and Participation                            |
| 13 | 4 | Knowledge and Practical Application | Expert Systems                                                                           | Lectures, Discussion, and Practical Application | Reports                                                  |
| 14 | 4 | Knowledge and Practical Application | Artificial Intelligence                                                                  | Lectures, Discussion, and Practical Application | Presenting and explaining reports through a presentation |



|    |   |                                     |                              |                                                 |                               |
|----|---|-------------------------------------|------------------------------|-------------------------------------------------|-------------------------------|
| 15 | 4 | Knowledge and Practical Application | Information Systems Security | Lectures, Discussion, and Practical Application | Interaction and participation |
|----|---|-------------------------------------|------------------------------|-------------------------------------------------|-------------------------------|

### 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

### 12. Learning and Teaching Resources

|                                                                    |                                                                                                                                                    |
|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any)                      |                                                                                                                                                    |
| Main references (sources)                                          | Publications on management information systems and information technologies available in the college library and the university's central library. |
| Recommended books and references (scientific journals, reports...) | Dr. Fayez Juma Al-Najjar, Management Information System Book.                                                                                      |
| Electronic References, Websites                                    | Websites on Management Information Systems.                                                                                                        |

## Course Description Form

|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Data Retrieval                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 2. Course Code:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| ITM 409                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 3. Semester / Year:                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| first Semester –2026                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Description Preparation Date:                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 1/9/2025                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 5. Available Attendance Forms:                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| In-person                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 6. Number of Credit Hours (Total) / Number of Units (Total)         |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 60- hours                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 7. Course administrator's name (mention all, if more than one name) |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Name: Dr Ahmed sabeeh yousif<br>Email:ahmedsabeeh123@ntu.edu.iq     |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 8. Course Objectives                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Course Objectives</b>                                            | <ul style="list-style-type: none"> <li>Provide students with fundamental concepts of information retrieval systems.</li> <li>Introduce various search engines, search and query algorithms.</li> <li>Train students on how to design and evaluate data retrieval systems.</li> <li>Understand ranking and evaluation algorithms for search results.</li> <li>Use modern tools such as Elasticsearch, Lucene, and SQL queries for data retrieval</li> </ul> |
| 9. Teaching and Learning Strategies                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Strategy</b>                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>A. Cognitive Objectives</p> <ul style="list-style-type: none"> <li>- Understanding and Analyzing Systems: The student will be able to understand the basic components of DATA SCIENCE and identify their vital role in supporting the information management. This includes the ability to analyze existing systems, identify their strengths and weaknesses, and suggest necessary improvements to increase efficiency and effectiveness.</li> <li>- Applying Technological Concepts: The student will acquire the ability to link the theoretical concepts of data mining, data retrieval to contemporary technological applications. This includes an understanding of modern technologies such as cloud computing and Big Data Analytics, and how they can be employed to achieve organizational strategic objectives.</li> </ul> <p>B. Course Skill Objectives</p> <ul style="list-style-type: none"> <li>- Problem-Solving Skills Using math: The student will develop the ability to identify problems that can be solved or mitigated using system engineering, and to propose innovative technology-based solutions, with a focus on operational efficiency and improved decision-making.</li> <li>- Systems Analysis and Design Skills: The student will acquire the ability to analyze different methods</li> </ul> <p>Teaching and Learning Methods</p> <ul style="list-style-type: none"> <li>- Direct instruction (lectures) using educational technology tools</li> <li>- Classroom discussion and interaction through assignments</li> <li>- Learning through practical application of materials requiring department laboratories</li> <li>- Project-Based Learning Strategy</li> <li>-Google classroom for blended learning</li> </ul> <p>Assessment Methods</p> <ul style="list-style-type: none"> <li>*Periodic Tests</li> <li>*Surprise Tests</li> <li>*Classroom Interaction and Participation</li> <li>*Research Assignments and Reports</li> <li>*Practical and Applied Tests</li> </ul> |
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|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>C- Affective and Value-Based Objectives</p> <p>C1- Strengthening the spirit of belonging to a team within the institution and the desire to provide the best</p> <p>C2- Strengthening the desire to compete to raise the educational level</p> <p>C3- Strengthening the sense of belonging to the specialty and developing the desire to work in information institutions</p> <p>Teaching and Learning Methods</p> <p>1. Periodic field visits to administrative and technical institutions</p> <p>2. Experience, actual practice, and interaction with staff through practical application (summer training) conducted by the student in close contact with beneficiaries</p> <p>3. Psychological Motivation and emotionally through open and direct discussions with students.</p> <p>D - General and transferable skills (other skills related to employability and personal development).</p> <p>D1 - Teaching students research and report writing skills.</p> <p>D2 - Teaching students how to connect theoretical knowledge with practical application that they will experience at work.</p> <p>D3 - Teaching students how to access and analyze information sources, and how to derive and document a summary of the information obtained through objective analysis of these sources.</p> <p>D4 - Teaching students how to design databases and websites and implement programs to serve various scientific fields.</p> |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 10. Course Structure

| Week | Hours | Required Learning Outcomes | Unit or subject name                                  | Learning method | Evaluation method             |
|------|-------|----------------------------|-------------------------------------------------------|-----------------|-------------------------------|
| 1    | 4     | Introduce                  | Introduction to data retrieval and its basic concepts | Lectures        | Interaction and participation |

|    |   |                                     |                                                               |                                                 |                                                         |
|----|---|-------------------------------------|---------------------------------------------------------------|-------------------------------------------------|---------------------------------------------------------|
| 2  | 4 | demonstrate                         | Traditional information retrieval systems                     | Lectures and Discussion                         | test                                                    |
| 3  | 4 | Knowledge and Practical Application | Types of search engines and architecture of retrieval systems | Lectures and Discussion                         | Interaction                                             |
| 4  | 4 | demonstrate                         | Basic search algorithms (Boolean, Vector Space Model)         | Lectures and Practical Application              | Interact and Participate, and Surprise Quiz             |
| 5  | 4 | demonstrate                         | Indexing models: inverted index                               | Lectures and Discussion                         | Interaction, Participation, and Quarterly Quiz          |
| 6  | 4 | demonstrate                         | Quantitative evaluation (Precision, Recall, F1 score)         | Lectures and Discussion                         | Interaction, Participation, and Report                  |
| 7  | 4 | demonstrate                         | Ranking algorithms (TF-IDF, BM25, etc.)                       | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments             |
| 8  | 4 | ppt                                 | <b>Midterm Exam</b>                                           | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments             |
| 9  | 4 | demonstrate                         | Web-scale data retrieval and modern search engines            | Lectures, Discussion, and Practical Application | Presenting and Explaining Report Through Presentation   |
| 10 | 4 | demonstrate                         | Query expansion and semantic search                           | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments             |
| 11 | 4 | demonstrate                         | Multimedia information retrieval (images, video, audio)       | Lectures, Discussion, and Practical Application | Daily Quiz                                              |
| 12 | 4 | demonstrate                         | Databases and their role in retrieval (SQL-based search)      | Lectures, Discussion, and Practical Application | Interaction and Participation                           |
| 13 | 4 | Paper test                          | Practical applications with Elasticsearch / Lucene            | Lectures, Discussion, and Practical Application | Reports                                                 |
| 14 | 4 | demonstrate                         | Design of a mini information retrieval project                | Lectures, Discussion, and Practical Application | Presenting and explaining report through a presentation |
| 15 | 4 | review                              | Final review and exam preparation                             | Lectures, Discussion, and                       | Interaction and participation                           |

|                                                                                                                                                                     |  |  |          |                          |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|----------|--------------------------|--|
|                                                                                                                                                                     |  |  |          | Practical<br>Application |  |
| <b>11. Course Evaluation</b>                                                                                                                                        |  |  |          |                          |  |
| Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc |  |  |          |                          |  |
| <b>12. Learning and Teaching Resources</b>                                                                                                                          |  |  |          |                          |  |
| Required textbooks (curricular books, if any)                                                                                                                       |  |  |          |                          |  |
| Main references (sources)                                                                                                                                           |  |  | library  |                          |  |
| Recommended books and references (scientific journals, reports...)                                                                                                  |  |  | library  |                          |  |
| Electronic References, Websites                                                                                                                                     |  |  | Websites |                          |  |

## Course Description Form

|                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. Course Name:</b>                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Information security                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>2. Course Code:</b>                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| ITM 410                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>3. Semester / Year:</b>                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Fall Semester –2026                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Description Preparation Date:</b>                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1/9/2025                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>5. Available Attendance Forms:</b>                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| In-person                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 60 hours                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>7. Course administrator's name (mention all, if more than one name)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Name: Dr Ahmed sabeeh yousif<br>Email:ahmedsabeeh123@ntu.edu.iq            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>8. Course Objectives</b>                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Course Objectives</b>                                                   | <ul style="list-style-type: none"> <li>– To understand the concept of information security</li> <li>– To analysis the methods like AES</li> <li>To Apply the methods based applicatio</li> </ul>                                                                                                                                                                                                                                                                                                                                               |
| <b>9. Teaching and Learning Strategies</b>                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Strategy</b>                                                            | <p><b>A. Cognitive Objectives</b></p> <ul style="list-style-type: none"> <li>- Understanding and Analyzing Systems: The student will be able to understand the basic components of information secutity and identify their vital role in supporting the information managrment. This includes the ability to analyze existing systems, identify their strengths and weaknesses, and suggest necessary improvements to increase efficiency and effectiveness.</li> <li>- Applying Technological Concepts: The student will acquire t</li> </ul> |

ability to link the theoretical concepts of SE to contemporary technological applications. This includes an understanding of modern technologies such as cloud computing and Big Data Analytics, and how they can be employed to achieve organizational strategic objectives.

#### B. Course Skill Objectives

- Problem-Solving Skills Using Information Systems: The student will develop the ability to identify information security problems that can be solved or mitigated using system engineering, and to propose innovative technology-based solutions, with a focus on operational efficiency and improved decision-making.
- Systems Analysis and Design Skills: The student will acquire the ability to analyze different methods

#### Teaching and Learning Methods

- Direct instruction (lectures) using educational technology tools
- Classroom discussion and interaction through assignments
- Learning through practical application of materials requiring department laboratories
- Project-Based Learning Strategy
- Google classroom for blended learning

#### Assessment Methods

- \*Periodic Tests
- \*Surprise Tests
- \*Classroom Interaction and Participation
- \*Research Assignments and Reports
- \*Practical and Applied Tests

#### C- Affective and Value-Based Objectives

- C1- Strengthening the spirit of belonging to a team within the institution and the desire to provide the best
- C2- Strengthening the desire to compete to raise the educational level
- C3- Strengthening the sense of belonging to the specialty and developing the desire to work in information institutions



|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><b>Teaching and Learning Methods</b></p> <ol style="list-style-type: none"> <li>1. Periodic field visits to administrative and technical institutions</li> <li>2. Experience, actual practice, and interaction with staff through practical application (summer training) conducted by the student in close contact with beneficiaries</li> <li>3. Psychological Motivation and emotionally through open and direct discussions with students.</li> </ol> <p>D - General and transferable skills (other skills related to employability and personal development).</p> <p>D1 - Teaching students research and report writing skills.</p> <p>D2 - Teaching students how to connect theoretical knowledge with practical application that they will experience at work.</p> <p>D3 - Teaching students how to access and analyze information sources, and how to derive and document a summary of the information obtained through objective analysis of these sources.</p> <p>D4 - Teaching students how to design databases and websites and implement programs to serve various scientific fields.</p> |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 10. Course Structure

| Week | Hours | Required Learning Outcomes                                                                | Unit or subject name                  | Learning method                    | Evaluation method                           |
|------|-------|-------------------------------------------------------------------------------------------|---------------------------------------|------------------------------------|---------------------------------------------|
| 1    | 4     | Introduction                                                                              | General Introduction, Basic Concepts, | Lectures                           | Interaction and participation               |
| 2    | 4     | Information security                                                                      | Summarizes the previous methods       | Lectures and Discussion            | test                                        |
| 3    | 4     | Knowledge and Practical Application                                                       | Various previous method               | Lectures and Discussion            | Interaction                                 |
| 4    | 4     | Security threats and types of attacks (internal and external, passive and active attacks) | Types of attacks                      | Lectures and Practical Application | Interact and Participate, and Surprise Quiz |
| 5    | 4     | Ransomware                                                                                | Explain the software,                 | Lectures and                       | Interaction,                                |

|                                                                                                                                                                     |   |                                                                         |                          |                                                 |                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------|--------------------------|-------------------------------------------------|---------------------------------------------------------|
|                                                                                                                                                                     |   |                                                                         | pros, and cons           | Discussion                                      | Participation, and Quarterly Quiz                       |
| 6                                                                                                                                                                   | 4 | Physical and logical security – firewalls and antivirus protection      | Firewalls                | Lectures and Discussion                         | Interaction, Participation, and Report                  |
| 7                                                                                                                                                                   | 4 | <b>Data encryption: basic concepts (symmetric and asymmetric, keys)</b> | <b>basic concepts</b>    | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments             |
| 8                                                                                                                                                                   | 4 | <b>symmetric and asymmetric, keys</b>                                   | , Case Study             | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments             |
| 9                                                                                                                                                                   | 4 | <b>خوارزميات التشفير: DES, RSA</b>                                      | Examples with many cases | Lectures, Discussion, and Practical Application | Presenting and Explaining Report Through Presentation   |
| 10                                                                                                                                                                  | 4 | <b>Digital Signatures, Certificates</b>                                 | Examples with many cases | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments             |
| 11                                                                                                                                                                  | 4 | <b>LAN/WAN, VPN, HTTPS, SSL</b>                                         | Mini project             | Lectures, Discussion, and Practical Application | Daily Quiz                                              |
| 12                                                                                                                                                                  | 4 | <b>IDS/IPS</b>                                                          | Examples                 | Lectures, Discussion, and Practical Application | Interaction and Participation                           |
| 13                                                                                                                                                                  | 4 | Operating system and database security                                  | database security        | Lectures, Discussion, and Practical Application | Reports                                                 |
| 14                                                                                                                                                                  | 4 | Cloud computing security                                                | Case studies             | Lectures, Discussion, and Practical Application | Presenting and explaining report through a presentation |
| 15                                                                                                                                                                  | 4 | review                                                                  | review                   | Lectures, Discussion, and Practical Application | Interaction and participation                           |
| <b>11. Course Evaluation</b>                                                                                                                                        |   |                                                                         |                          |                                                 |                                                         |
| Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc |   |                                                                         |                          |                                                 |                                                         |
| <b>12. Learning and Teaching Resources</b>                                                                                                                          |   |                                                                         |                          |                                                 |                                                         |

|                                                                    |                                               |
|--------------------------------------------------------------------|-----------------------------------------------|
| Required textbooks (curricular books, if any)                      |                                               |
| Main references (sources)                                          | Publications and also in library , many books |
| Recommended books and references (scientific journals, reports...) |                                               |
| Electronic References, Websites                                    | Websites                                      |

## Course Description Form

|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Software engineering                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2. Course Code:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| ITM 406                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 3. Semester / Year:                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Fall Semester –2026                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Description Preparation Date:                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 1/9/2025                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 5. Available Attendance Forms:                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| In-person                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 6. Number of Credit Hours (Total) / Number of Units (Total)         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 60 hours                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 7. Course administrator's name (mention all, if more than one name) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Name: Dr Ahmed sabeeh yousif<br>Email:ahmedsabeeh123@ntu.edu.iq     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 8. Course Objectives                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Course Objectives                                                   | Providing the student with practical skills and knowledge on how to apply computer systems organizations to manage their human and material resources.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 9. Teaching and Learning Strategies                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Strategy</b>                                                     | <p>A. Cognitive Objectives</p> <ul style="list-style-type: none"> <li>- Understanding and Analyzing Systems: The student will be able to understand the basic components of SE and identify their vital role in supporting organizational decision-making. This includes the ability to analyze existing systems, identify their strengths and weaknesses, and suggest necessary improvements to increase efficiency and effectiveness.</li> <li>- Applying Technological Concepts: The student will acquire the ability to link the theoretical concepts of SE to contemporary technological applications. This includes an understanding of</li> </ul> |

modern technologies such as cloud computing and Big Data Analytics, and how they can be employed to achieve organizational strategic objectives.

#### B. Course Skill Objectives

- Problem-Solving Skills Using Information Systems: The student will develop the ability to identify SE problems that can be solved or mitigated using system engineering, and to propose innovative technology-based solutions, with a focus on operational efficiency and improved decision-making.
- Systems Analysis and Design Skills: The student will acquire the ability to analyze the functional and non-functional requirements of a new information system and design appropriate solutions using systems modeling tools and techniques such as data flow diagrams (DFDs) and entity-relationship diagrams (ERDs), qualifying them to be an effective link between business and technical teams.

#### Teaching and Learning Methods

- Direct instruction (lectures) using educational technology tools
- Classroom discussion and interaction through assignments
- Learning through practical application of materials requiring department laboratories
- Project-Based Learning Strategy
- Google classroom for blended learning

#### Assessment Methods

- \*Periodic Tests
- \*Surprise Tests
- \*Classroom Interaction and Participation
- \*Research Assignments and Reports
- \*Practical and Applied Tests

#### C- Affective and Value-Based Objectives

- C1- Strengthening the spirit of belonging to a team within the institution and the desire to provide the best
- C2- Strengthening the desire to compete to raise the educational level

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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|  | <p>C3- Strengthening the sense of belonging to the specialty and developing the desire to work in information institutions</p> <p>Teaching and Learning Methods</p> <ol style="list-style-type: none"> <li>1. Periodic field visits to administrative and technical institutions</li> <li>2. Experience, actual practice, and interaction with staff through practical application (summer training) conducted by the student in close contact with beneficiaries</li> <li>3. Psychological Motivation and emotionally through open and direct discussions with students.</li> </ol> <p>D - General and transferable skills (other skills related to employability and personal development).</p> <p>D1 - Teaching students research and report writing skills.</p> <p>D2 - Teaching students how to connect theoretical knowledge with practical application that they will experience at work.</p> <p>D3 - Teaching students how to access and analyze information sources, and how to derive and document a summary of the information obtained through objective analysis of these sources.</p> <p>D4 - Teaching students how to design databases and websites and implement programs to serve various scientific fields.</p> |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 10. Course Structure

| Week | Hours | Required Learning Outcomes          | Unit or subject name                  | Learning method                    | Evaluation method                           |
|------|-------|-------------------------------------|---------------------------------------|------------------------------------|---------------------------------------------|
| 1    | 4     | Software engineer                   | General Introduction, Basic Concepts, | Lectures                           | Interaction and participation               |
| 2    | 4     | Software process                    | Identify the software process         | Lectures and Discussion            | test                                        |
| 3    | 4     | Knowledge and Practical Application | Various previous method               | Lectures and Discussion            | Interaction                                 |
| 4    | 4     | <b>Process Models</b>               | Waterfall model                       | Lectures and Practical Application | Interact and Participate, and Surprise Quiz |

|    |   |                                      |                                              |                                                 |                                                          |
|----|---|--------------------------------------|----------------------------------------------|-------------------------------------------------|----------------------------------------------------------|
|    |   |                                      |                                              |                                                 |                                                          |
| 5  | 4 | <b>Process Models</b>                | V model                                      | Lectures and Discussion                         | Interaction, Participation, and Quarterly Quiz           |
| 6  | 4 | <b>Process Models</b>                | Incremental model                            | Lectures and Discussion                         | Interaction, Participation, and Report                   |
| 7  | 4 | <b>Process Models</b>                | Case studies                                 | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments              |
| 8  | 4 | <b>Agile Modeling</b>                | , Case Study                                 | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments              |
| 9  | 4 | <b>Agile Modeling</b>                | Knowledge-Based Business Systems, Case Study | Lectures, Discussion, and Practical Application | Presenting and Explaining Reports Through Presentation   |
| 10 | 4 | <b>Agile Modeling</b>                | test                                         | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments              |
| 11 | 4 | <b>Software Engineering Practice</b> | Mini project                                 | Lectures, Discussion, and Practical Application | Daily Quiz                                               |
| 12 | 4 | <b>Software Engineering Practice</b> | Examples                                     | Lectures, Discussion, and Practical Application | Interaction and Participation                            |
| 13 | 4 | <b>Software Engineering Practice</b> | Expert Systems                               | Lectures, Discussion, and Practical Application | Reports                                                  |
| 14 | 4 | <b>System Engineering</b>            | Artificial Intelligence                      | Lectures, Discussion, and Practical Application | Presenting and explaining reports through a presentation |
| 15 | 4 | <b>System Engineering</b>            | review                                       | Lectures, Discussion, and Practical Application | Interaction and participation                            |

## 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

| 12. Learning and Teaching Resources                                   |                                               |
|-----------------------------------------------------------------------|-----------------------------------------------|
| Required textbooks (curricular books, if any)                         |                                               |
| Main references (sources)                                             | Publications and also in library , many books |
| Recommended books and references<br>(scientific journals, reports...) |                                               |
| Electronic References, Websites                                       | Websites                                      |



## Course Description Form

|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Business Intelligence                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. Course Code:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| ELM411                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. Semester / Year:                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Fall Semester –2026                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Description Preparation Date:                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1/9/2025                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. Available Attendance Forms:                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| In-person                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 6. Number of Credit Hours (Total) / Number of Units (Total)         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 45 hours                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 7. Course administrator's name (mention all, if more than one name) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Name: Noor deah azeez<br>Email:dr.noor.deah@ntu.edu.iq              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 8. Course Objectives                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Course Objectives</b>                                            | <ul style="list-style-type: none"> <li><b>Foundational Knowledge:</b> Provide an understanding of business intelligence (BI) concepts and tools.</li> <li><b>Data Analysis Skills:</b> Develop skills for analyzing business data.</li> <li><b>Tool Proficiency:</b> Teach practical use of BI software.</li> <li><b>Decision-Making:</b> Enhance data-driven decision-making abilities.</li> <li><b>Current Trends:</b> Introduce emerging BI trends and technologies.</li> </ul> |
| 9. Teaching and Learning Strategies                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Strategy</b>                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |       |          |                 |          |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------|-----------------|----------|------------|
| <p>Teaching and Learning Methods</p> <ul style="list-style-type: none"> <li>- Direct instruction (lecture) with the use of educational technology tools</li> <li>- Classroom discussion and interaction through assignments</li> <li>- Learning through practical application of materials requiring departmental laboratories</li> <li>- Project-based learning strategy</li> </ul> <p>Assessment Methods</p> <ul style="list-style-type: none"> <li>*Periodic Tests</li> <li>*Surprise Tests</li> <li>*Classroom Interaction and Participation</li> <li>*Research Assignments and Reports</li> <li>*Practical and Applied Tests</li> </ul> <p>C- Affective and Value-Based Objectives</p> <p>C1- Enhancing the sense of belonging to a team within the institution and the desire to provide the best</p> <p>C2- Enhancing the desire to compete to raise the educational level</p> <p>C3- Enhancing the sense of belonging to the specialty and developing the desire to work in information institutions</p> |       |          |                 |          |            |
| 10. Course Structure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |          |                 |          |            |
| Week                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Hours | Required | Unit or subject | Learning | Evaluation |

|    |   | <b>Learning Outcomes</b>            | <b>name</b>                                                                                               | <b>method</b>                                   | <b>method</b>                                          |
|----|---|-------------------------------------|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------|--------------------------------------------------------|
| 1  | 3 | Knowledge and Practical Application | Introduction to Business Intelligence                                                                     | Lectures and Discussion                         | Interaction and participation                          |
| 2  | 3 | Knowledge and Practical Application | The importance of business intelligence and its systems in business organizations                         | Lectures and Discussion                         | Interaction and participation                          |
| 3  | 3 | Knowledge and Practical Application | How to design business intelligence systems in business organizations                                     | Lectures and Discussion                         | Interaction, participation, and daily testing          |
| 4  | 3 | Knowledge and Practical Application | Classifications of business intelligence systems and identifying the most important beneficiaries of them | Lectures and Practical Application              | Interact and Participate, and Surprise Quiz            |
| 5  | 3 | Knowledge and Practical Application | BI Strategy and Governance                                                                                | Lectures and Discussion                         | Interaction, Participation, and Quarterly Quiz         |
| 6  | 3 | Knowledge and Practical Application | Big Data and BI                                                                                           | Lectures and Discussion                         | Interaction, Participation, and Report                 |
| 7  | 3 | Knowledge and Practical Application | Cloud BI Solutions                                                                                        | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments            |
| 8  | 3 | Knowledge and Practical Application | Data warehouse                                                                                            | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments            |
| 9  | 3 | Knowledge and Practical Application | The concept, importance, and how to mine information                                                      | Lectures, Discussion, and Practical Application | Presenting and Explaining Reports Through Presentation |
| 10 | 3 | Knowledge and Practical Application | Data warehouse                                                                                            | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments            |
| 11 | 3 | Knowledge and Practical Application | Data warehouse star model                                                                                 | Lectures, Discussion, and Practical Application | Daily Quiz                                             |
| 12 | 3 | Knowledge and Practical Application | Real-time analytical                                                                                      | Lectures, Discussion                            | Interaction and                                        |

|    |   |                                     |                                                                                                                                                                                                                                                                                                                          |                                                 |                                                         |
|----|---|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|---------------------------------------------------------|
|    |   | Practical Application               | processing                                                                                                                                                                                                                                                                                                               | and Practical Application                       | Participation                                           |
| 13 | 3 | Knowledge and Practical Application | Design and dimension in a practical applicati                                                                                                                                                                                                                                                                            | Lectures, Discussion, and Practical Application | Reports                                                 |
| 14 | 3 | Knowledge and Practical Application | Dashboards and Reporting                                                                                                                                                                                                                                                                                                 | Lectures, Discussion, and Practical Application | Presenting and explaining report through a presentation |
| 15 | 3 | Knowledge and Practical Application | Course Review and Final Exam <ul style="list-style-type: none"> <li>• <b>Lecture:</b> Comprehensive Review of the Course</li> <li>• <b>Exam:</b> Final Exam covering material from the entire course</li> <li>• <b>Project:</b> Group presentations on selected BI topics</li> </ul> <b>Reading:</b> Review all chapters | Lectures, Discussion, and Practical Application | Interaction and participation                           |

## 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

## 12. Learning and Teaching Resources

|                                               |                                                                                                                                                                                                 |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any) |                                                                                                                                                                                                 |
| Main references (sources)                     | <b>Turban, E., R. Sharda, D. Delen &amp; D. King (2011)</b><br><b>"Business Intelligence: A Managerial Approach",</b><br><b>2nd</b><br><b>Edition, Prentice Education, Inc, New-Jersey, USA</b> |

|                                                                       |                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                       | <p>الناصر، عامر عبد الرزاق عبد المحسن، 2015، ادارة المعرفة في اطار نظم ذكاء الاعمال، الطبعة الاولى، دار اليازوري للنشر والتوزيع، عمان ، الاردن</p> <p>حسين، ليث سعد، السالم ، محمد عاصم، 2021 ،مستودع البيانات ادواته وتقنياته، مدخل ادارة البيانات وادارة البيانات الكبيرة، دار الاكاديميون للنشر والتوزيع.</p> |
| Recommended books and references<br>(scientific journals, reports...) |                                                                                                                                                                                                                                                                                                                  |
| Electronic References, Websites                                       | Websites on Business Intelligence                                                                                                                                                                                                                                                                                |

## نموذج وصف المقرر / الإدارة الالكترونية

|                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. المؤسسة التعليمية                                                                                                                                                                                                                                                                                                                                                                              |
| الكلية التقنية الادارية الموصل                                                                                                                                                                                                                                                                                                                                                                    |
| 2. القسم العلمي / المركز                                                                                                                                                                                                                                                                                                                                                                          |
| قسم ادارة تقنيات المعلومات/المرحلة الرابعة                                                                                                                                                                                                                                                                                                                                                        |
| 3. اسم / رمز المقرر                                                                                                                                                                                                                                                                                                                                                                               |
| الإدارة الالكترونية / ELM 408                                                                                                                                                                                                                                                                                                                                                                     |
| 4. أشكال الحضور المتاحة                                                                                                                                                                                                                                                                                                                                                                           |
| اسبوعي                                                                                                                                                                                                                                                                                                                                                                                            |
| 5. الفصل / السنة                                                                                                                                                                                                                                                                                                                                                                                  |
| كورسات                                                                                                                                                                                                                                                                                                                                                                                            |
| 6. عدد الساعات الدراسية (الكلي)                                                                                                                                                                                                                                                                                                                                                                   |
| 56 ساعة                                                                                                                                                                                                                                                                                                                                                                                           |
| 7. تاريخ إعداد هذا الوصف                                                                                                                                                                                                                                                                                                                                                                          |
| 2024/7/4                                                                                                                                                                                                                                                                                                                                                                                          |
| 8. اهداف المقرر                                                                                                                                                                                                                                                                                                                                                                                   |
| هذا المقرر يعمل على زيادة الاهتمام بممارسة الإدارة الالكترونية في المؤسسات وخاصة في المؤسسات التي تمتلك القدرة على الدخول في المجال الالكتروني ومواكبة الدول المتقدمة من خلال الأدوات المستخدمة لتنفيذ وظائف الإدارة الالكترونية من تخطيط واتخاذ القرارات ودعم الأنشطة ذات الصلة بإدارة علاقات المنظمة مع البيئة الخارجية وتنوع وتكامل أيضا مع العلاقات الداخلية في كل مستوى من مستويات الإدارة . |
| 9. مخرجات المقرر وطرائق التعليم والتعلم والتقييم                                                                                                                                                                                                                                                                                                                                                  |
| أ- الأهداف المعرفية                                                                                                                                                                                                                                                                                                                                                                               |
| 1- التعرف على المفاهيم والاساليب العلمية والتقنيات الحديثة في ممارسة الإدارة الالكترونية في المؤسسات.                                                                                                                                                                                                                                                                                             |
| 2- يتمكن من استخدام الارشفة الالكترونية في الاعمال .                                                                                                                                                                                                                                                                                                                                              |
| 3- يتمكن الطالب من التعرف وممارسة وظائف الإدارة الالكترونية.-                                                                                                                                                                                                                                                                                                                                     |
| 4- التعريف بماهية الإدارة الالكترونية وانماطها وتطبيقاتها .                                                                                                                                                                                                                                                                                                                                       |
| ب - الأهداف المهاراتية الخاصة بالمقرر.                                                                                                                                                                                                                                                                                                                                                            |

## ب1 - الإلمام بأهمية وخصائص الإدارة الالكترونية

ب2 - تنمية مهارات استخدام الإدارة الالكترونية في المؤسسات .

ب3 - تنمية مهارات الطالب وتعزيز قدرته على تحويل الإجراءات الورقية الى الالكترونية .

ب4- إكساب الطالب القدرة على تحليل واتخاذ القرار المدعوم بالتكنولوجيا .

## طرائق التعليم والتعلم

- التلقين المباشر (المحاضرة) مع استخدام ادوات تكنولوجيا التعليم
- المناقشة والتفاعل الصفّي من خلال التكليف بالواجبات
- استراتيجيّة التعليم القائم على المشروعات البحثيّة

## طرائق التقييم

\*الاختبارات الدورية

\*الاختبارات المفاجئة

\*التفاعل والمشاركة الصفية

\*التكليفات البحثية والتقارير

\*الاختبارات العملية والتطبيقية

## ج- الأهداف الوجدانية والقيمية

ج1- تعزيز روح الانتماء لفريق داخل المؤسسة والرغبة لتقديم الافضل

ج2- تعزيز الرغبة في المنافسة لرفع المستوى التعليمي

ج3- تعزيز الشعور بالانتماء الى التخصص وتنمية الرغبة في العمل بمؤسسات المعلومات

## طرائق التعليم والتعلم

1.الزيارات الميدانية الدورية للمؤسسات الادارية والتقنية

2.المعايشة والممارسة الفعلية والاختلاط بالعاملين من خلال التطبيق العملي (التدريب الصيفي)الذي يقوم به الطالب بالتعايش مع المستفيدين

3.التحفيز النفسي والعاطفي من خلال المناقشات المفتوحة والمباشرة مع الطلبة

د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).

1- تعليم الطالب على مهارات كتابة البحوث والتقارير

2- تعليم الطالب كيفية الربط بين الجانب النظري بالتطبيق العملي الذي سوف يمارسه في العمل

3- تعليم الطالب كيفية التعامل مع مصادر المعلومات وتحليلها واستنباط وتدوين خلاصة بالمعلومات التي يحصل عليها نتيجة التحليل الموضوعي لهذه المصادر

#### 10. بنية المقرر

| الأسبوع | الساعات | مخرجات التعلم المطلوبة                                                                                                                                                                            | اسم الوحدة / أو الموضوع                                                | طريقة التعليم             | طريقة التقييم                   |
|---------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|---------------------------|---------------------------------|
| الأول   | 4       | التعرف على أساسيات الإدارة الالكترونية ومقارنتها مع المصطلحات الأخرى . أهمية الإدارة الالكترونية . اهداف وانماط الإدارة الالكترونية . خصائص الإدارة الالكترونية مزايا وعيوب الإدارة الالكترونية . | تقديم المادة ، تقسيم المجموعات، التعرف على أساسيات الإدارة الالكترونية | المحاضرات والمناقشة       | التفاعل والمشاركة               |
| الثاني  | 4       | مراحل التحول نحو الادارة الالكترونية                                                                                                                                                              | المراحل                                                                | المحاضرات والمناقشة       | التفاعل والمشاركة               |
| الثالث  | 4       | متطلبات التحول نحو الادارة الالكترونية تحديات التحول نحو الإدارة الالكترونية                                                                                                                      | المتطلبات والتحديات                                                    | المحاضرات والمناقشة       | التفاعل والمشاركة واختبار يومي  |
| الرابع  | 4       | وظائف الادارة الالكترونية /التخطيط ، الأنواع والمقارنة الالكترونية                                                                                                                                | وظيفة التخطيط الالكتروني .                                             | المحاضرات والتطبيق العملي | التفاعل والمشاركة واختبار مفاجئ |
| الخامس  | 4       | التنظيم الالكتروني                                                                                                                                                                                | المركزية واللامركزية                                                   | المحاضرات والمناقشة       | التفاعل والمشاركة واختبار فصلي  |



|            |   |                                                                    |                                                                                                      |                                           |                                             |
|------------|---|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-------------------------------------------|---------------------------------------------|
| السادس     | 4 | الرقابة الالكترونية<br>متطلبات التطبيق<br>القيادة الالكترونية      | الرقابة والقيادة<br>الالكترونية                                                                      | المحاضرات<br>والمناقشة والتطبيق<br>العملي | التفاعل والمشاركة والتقارير                 |
| السابع     | 4 | نشأة ومفهوم الحكومة<br>الالكترونية، واهميتها<br>وأهدافها           | المفهوم                                                                                              | المحاضرات<br>والمناقشة والتطبيق<br>العملي | التفاعل والمشاركة<br>وواجبات                |
| الثامن     | 4 | خصائص الحكومة<br>الالكترونية<br>فوائد تطبيق الحكومة<br>الالكترونية | الخصائص والفوائد                                                                                     | المحاضرات<br>والمناقشة والتطبيق<br>العملي | التفاعل والمشاركة<br>وواجبات                |
| التاسع     | 4 | مراحل تطبيق<br>الحكومة الالكترونية                                 | المراحل                                                                                              | المحاضرات<br>والمناقشة والتطبيق<br>العملي | القاء وشرح التقارير من<br>خلال presentation |
| العاشر     | 4 | التحديات والفرص<br>التي تواجه تطبيق<br>الحكومة الالكترونية         | التحديات والفرص                                                                                      | المحاضرات<br>والمناقشة والتطبيق<br>العملي | التفاعل والمشاركة<br>وواجبات                |
| الحادي عشر | 4 | مستلزمات بناء<br>الحكومة الالكترونية<br>وخطواتها ومحدداتها         | مبررات التحول نحو<br>الحكومة الالكترونية<br>والمستلزمات<br>والخطوات                                  | المحاضرات<br>والمناقشة                    | اختبار يومي                                 |
| الثاني عشر | 4 | الارشفة الالكترونية                                                | -مفهوم الارشفة<br>الالكترونية .<br>- أهمية الارشفة<br>الالكترونية<br>-اهداف الارشفة<br>الالكترونية . | المحاضرات<br>والمناقشة                    | التفاعل والمشاركة                           |
| الثالث عشر | 4 | التعليم الالكتروني                                                 | التطور التاريخي<br>للتعليم الالكتروني .<br>مفهوم التعليم<br>الالكتروني والاهمية<br>والاهداف          | التطبيق العملي                            | التقارير                                    |

|                                                                                                                                                                                                                                                                               |   |                                                           |               |                |                                                                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-----------------------------------------------------------|---------------|----------------|--------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                               |   | والخصائص والانواع<br>والمزايا والعيوب .                   |               |                |                                                                                            |
| الرابع عشر                                                                                                                                                                                                                                                                    | 4 | امثلة على تطبيقات<br>الإدارة الالكترونية<br>(دراسة حالة ) | (دراسة حالة ) | التطبيق العملي | القاء وشرح التقارير من<br>خلال presentation                                                |
| 11. البنية التحتية                                                                                                                                                                                                                                                            |   |                                                           |               |                |                                                                                            |
|                                                                                                                                                                                                                                                                               |   |                                                           |               |                | 1- الكتب<br>المقررة<br>المطلوبة                                                            |
| -الاعمال الالكترونية ،تأليف سعد غالب ياسين ، الطبعة الاولى ،2016.<br>- الادارة والمعرفة الالكترونية /الاستراتيجية - الوظائف – المجالات ، د.نجم عبود نجم ،2009<br>-الادارة الرقمية المجالات والتطبيقات ، تأليف بشير عباس العلق ، الطبعة الاولى ،2005                           |   |                                                           |               |                | 2- المراجع<br>الرئيسية<br>(المصادر)                                                        |
| المجلات العلمية في الاختصاصات الخاصة بتقنيات المعلومات                                                                                                                                                                                                                        |   |                                                           |               |                | ا- الكتب<br>والمراجع<br>التي يوصى<br>بها<br>( المجالات<br>العلمية ،<br>التقارير<br>..... ) |
| المواقع الالكترونية المتخصصة                                                                                                                                                                                                                                                  |   |                                                           |               |                | ب -<br>المراجع<br>الالكترونية،<br>مواقع<br>الانترنت<br>....                                |
| 12. خطة تطوير المقرر الدراسي                                                                                                                                                                                                                                                  |   |                                                           |               |                |                                                                                            |
| تهدف خطة تطوير هذا المقرر إلى تحديث المحتوى بدمج أحدث التطورات في الإدارة ، مثل التحول الرقمي والحكومة الالكترونية<br>والارشفة الالكترونية ، لتعزيز فهم الطلاب للمفاهيم الأساسية وتطبيقاتها العملية. ستركز الخطة على إضافة دراسات حالة واقعية<br>وتمارين عملية لتدريب الطلاب. |   |                                                           |               |                |                                                                                            |
| توفير المصادر العلمية الحديثة و من دور نشر عالمية معروفة لمكتبة الكلية و التي تعزز مفردات الدروس المعطاة للكلية .                                                                                                                                                             |   |                                                           |               |                |                                                                                            |

## **Course Description Template (2026) – Ethics of E-Business**

Educational Institution:

Technical Administrative College, Mosul

Department / Center:

Department of Information Technology Management / Fourth Level

Course Title / Code:

Ethics of E-Business / ELM407

Attendance Format:

Weekly

Term / Year:

spring semester / 2026

Total Study Hours:

45 hours

Date of Course Description Preparation:

June 30, 2026

### **Course Objectives**

- Equip students with fundamental concepts in e-business ethics.
- Understand ethical issues in the workplace.
- Recognize administrative values and social responsibility.

### **Cognitive Objectives**

- Ethical Understanding in the Digital Environment: Students will identify ethical principles and values related to conducting business in the digital space, including privacy, data protection, intellectual property, and professional behavior.
- Analyzing Legal and Ethical Challenges in E-Commerce: Students will develop the ability to analyze ethical and legal dilemmas that organizations and individuals face in e-business and understand their impact on organizational reputation and sustainability.

### **Skills-Based Objectives**

- Ethical Decision-Making: Students will develop the ability to assess options in complex ethical situations and choose appropriate solutions balancing profitability with ethical standards.

- Developing Digital Professional Conduct Policies: Students will be able to assist in drafting or reviewing internal digital conduct policies, including email usage, cybersecurity, and electronic communication guidelines.

### **Affective and Value-Based Objectives**

- Enhancing Ethical Commitment: Students will develop a sense of responsibility for their digital behavior and its societal impact.
- Instilling Integrity and Transparency: Students will embrace professional values in digital performance and avoid unethical practices such as hacking, digital manipulation, or misinformation.

### **Transferable General Skills**

- Ethical Research and Analysis Skills: Mastering research and multi-perspective ethical analysis.
- Academic Writing in Legal/Ethical Contexts: Writing professional ethical reports with documentation and support.
- Presentation and Persuasion Skills: Presenting ethical opinions and decisions convincingly and logically.

## Course Structure

| Week | Hours | Learning Outcomes                   | Unit/Topic                                    | Teaching Method                  | Assessment Method             |
|------|-------|-------------------------------------|-----------------------------------------------|----------------------------------|-------------------------------|
| 1    | 4     | Knowledge and Practical Application | Introduction, Basic Concepts, Business Ethics | Lectures & Discussions           | Participation                 |
| 2    | 4     | Knowledge and Practical Application | Internet Ethics                               | Lectures & Discussions           | Participation                 |
| 3    | 4     | Knowledge and Practical Application | Training for Ethical Systems in Organizations | Lectures & Discussions           | Participation & Daily Quiz    |
| 4    | 4     | Knowledge and Practical Application | Ethical Dilemmas                              | Lectures & Practical Application | Participation & Surprise Quiz |
| 5    | 4     | Knowledge and Practical Application | Types of Legal Responsibility                 | Lectures & Discussions           | Participation & Midterm       |
| 6    | 4     | Knowledge and Practical Application | Challenges in E-Business Ethics               | Lectures, Discussions & Practice | Participation & Reports       |
| 7    | 4     | Knowledge and Practical Application | Types and Characteristics of Values           | Lectures, Discussions & Practice | Participation & Homework      |
| 8    | 4     | Knowledge and Practical Application | Sources of Values and Their Role in Success   | Lectures, Discussions & Practice | Participation & Homework      |
| 9    | 4     | Knowledge and Practical Application | Social Responsibility                         | Lectures, Discussions & Practice | Reports & Presentations       |
| 10   | 4     | Knowledge and Practical Application | Elements and Pyramid of Social Responsibility | Lectures, Discussions & Practice | Participation & Homework      |
| 11   | 4     | Knowledge and Practical Application | Intellectual Property Concept                 | Lectures & Discussions           | Daily Quiz                    |
| 12   | 4     | Knowledge                           | Pros and Cons                                 | Lectures &                       | Participation                 |

|    |   |                                              |                                                          |                           |                            |
|----|---|----------------------------------------------|----------------------------------------------------------|---------------------------|----------------------------|
|    |   | and<br>Practical<br>Application              | of Intellectual<br>Property                              | Discussions               |                            |
| 13 | 4 | Knowledge<br>and<br>Practical<br>Application | Concept and<br>Purpose of<br>Governance                  | Lectures &<br>Discussions | Reports                    |
| 14 | 4 | Knowledge<br>and<br>Practical<br>Application | Ethical<br>Principles in<br>E-Decision<br>Making         | Practical<br>Application  | Reports &<br>Presentations |
| 15 | 4 | Knowledge<br>and<br>Practical<br>Application | Organizational<br>Citizenship<br>and Corporate<br>Ethics | Lectures &<br>Discussions | Participation              |

## Course Description Form

|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Android Apps Programming                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 2. Course Code:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| ELM412                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 3. Semester / Year:                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Spring Semester –2026                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Description Preparation Date:                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 1/9/2025                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 5. Available Attendance Forms:                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| In-person                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 6. Number of Credit Hours (Total) / Number of Units (Total)         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 60 hours                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 7. Course administrator's name (mention all, if more than one name) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Name: Noor Nabeel Hazim<br>Email: noor.nabeel@ntu.edu.iq            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 8. Course Objectives                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Course Objectives</b>                                            | <b>Learn the basic concepts and technology for creating mobile applications, as well as design guidelines for creating applications for the Android operating system.</b>                                                                                                                                                                                                                                                                                       |
| 9. Teaching and Learning Strategies                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Strategy</b>                                                     | 1- Understanding the basics of mobile application programming<br>2- Knowing design patterns and user interface principles<br>3- Understanding the mobile application lifecycle<br>4- Familiarity with testing and maintenance techniques<br>5- Mobile application development<br><br>Teaching and learning methods<br>- Direct instruction (lecture) with the use of educational technology tools<br>- Classroom discussion and interaction through assignments |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"> <li>- Learning through practical application of materials requiring department labs</li> <li>- Project-based learning strategy</li> </ul> <p>Assessment methods</p> <ul style="list-style-type: none"> <li>* Periodic tests</li> <li>* Pop quizzes</li> <li>* Classroom interaction and participation</li> <li>* Research assignments and reports</li> <li>* Practical and applied tests</li> </ul> |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 10. Course Structure

| Week | Hours | Required Learning Outcomes                     | Unit or subject name                                                                                            | Learning method                          | Evaluation method                   |
|------|-------|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------------|-------------------------------------|
| 1    | 4     | Learn the importance of mobile app development | - Introduction to mobile apps<br>- The importance of apps in business<br>- Introduction to the Flutter platform | Lecture and Discussion                   | Interaction and participation       |
| 2    | 4     | Learn the Dart language                        | 1-Introduction<br>2- Dart Support platforms                                                                     | Lecture and Discussion                   | Interaction and participation       |
| 3    | 4     | Learn Dart editors                             | - Reviewing Dart Editors<br>-Writing First Dart Program                                                         | Lecture, Discussion, and Practice in lab | Interaction and participation       |
| 4    | 4     | Learn how to use comments and define variables | Comments and variables (var, dynamic, final, and const)                                                         | Lecture, Discussion, and Practice in lab | Interaction, coding, and quiz       |
| 5    | 4     | Define variables                               | Nullable and Non-Nullable, List, Set                                                                            | Lecture, Discussion, and Practice in lab | Interaction, Coding, and first exam |
| 6    | 4     | Use maps                                       | Map in Dart, Map Literals, Map Constructors                                                                     | Lecture, Discussion, and Practice in lab | Interaction and Participation       |
| 7    | 4     | Use conditional                                | If Else Statement and Switch Case                                                                               | Lecture, Discussion,                     | Interaction, participation and      |



|    |   |                                           |                                                                   |                                          |                                                          |
|----|---|-------------------------------------------|-------------------------------------------------------------------|------------------------------------------|----------------------------------------------------------|
|    |   | statements                                |                                                                   | and Practice in l                        | assignment                                               |
| 8  | 4 | Recursive statements                      | for... in loop, for loop, for each loop, while, do.. while        | Lecture, Discussion, and Practice in l   | Interaction and participation                            |
| 9  | 4 | Functions and object-oriented programming | Functions and Object Oriented Functions types Anonymous Functions | Lecture, Discussion, and Practice in lab | Interaction and participation                            |
| 10 | 4 | Constructors and keywords                 | Constructors and Keywords                                         | Lecture, Discussion, and Practice in lab | Interaction and participation                            |
| 11 | 4 | Interfaces                                | Interface in Dart Method Overriding                               | Lecture, Discussion, and Practice in lab | Quiz                                                     |
| 12 | 4 | Build apps using Flutter                  | Building Applications with Flutter                                | Lecture, Discussion, and Practice in lab | Interaction and participation                            |
| 13 | 4 | Widgets and State                         | Basic widgets                                                     | Lecture, Discussion, and Practice in lab | Report                                                   |
| 14 | 4 | Scaffold                                  | Scaffold                                                          | Lecture, Discussion, and Practice in lab | Presenting and explaining reports through a presentation |
| 15 | 4 | Buttons, SizedBox                         | Buttons, SizedBox                                                 | Lecture, Discussion, and Practice in lab | Interaction and participation                            |

## 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

## 12. Learning and Teaching Resources

|                                                                    |                                                                                                             |
|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any)                      |                                                                                                             |
| Main references (sources)                                          | Publications on Android Apps Programming in the college library and the university's central library.       |
| Recommended books and references (scientific journals, reports...) | Android Programming The Big Nerd Ranch Guide, Bill Phillips, Chris Stewart, Brian Hardy & Kristin Marsicano |

|                                 |                                                                    |
|---------------------------------|--------------------------------------------------------------------|
| Electronic References, Websites | Dart.dev and <a href="https://flutter.dev">https://flutter.dev</a> |
|---------------------------------|--------------------------------------------------------------------|

## Course Description Form/ Contemporary Administrative Approaches

|                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Educational institution                                                                                                                                                                                                                                                                        |
| Mosul Technical Administrative College                                                                                                                                                                                                                                                            |
| 2. Department / Center Scientific                                                                                                                                                                                                                                                                 |
| Information Technology Management Department/Fourth Stage                                                                                                                                                                                                                                         |
| 3. Course Name/Code                                                                                                                                                                                                                                                                               |
| Administrative Approaches ContemporaryELM402                                                                                                                                                                                                                                                      |
| 4. Available attendance forms                                                                                                                                                                                                                                                                     |
| weekly                                                                                                                                                                                                                                                                                            |
| 5. semester/year                                                                                                                                                                                                                                                                                  |
| Courses/ spring semester                                                                                                                                                                                                                                                                          |
| 6. (total) Number of study hours                                                                                                                                                                                                                                                                  |
| 60 hours                                                                                                                                                                                                                                                                                          |
| 7. Date this description was prepared                                                                                                                                                                                                                                                             |
| 1/9/2025                                                                                                                                                                                                                                                                                          |
| 8. Course objectives                                                                                                                                                                                                                                                                              |
| <p>techniques in Modern Contemporary administration methods Understanding concepts and .the practice of corporate management</p> <p>.The student will be able to possess effective administrative tools in management</p> <p>.He can use several approaches, including creativity in business</p> |
| 9. es, teaching, learning and assessment methodsCourse outcom                                                                                                                                                                                                                                     |
| <p>1- objectives cognitive</p> <p>.the concepts of contemporary administrative approaches Learn -A1</p> <p>. know knowledge management Be able to -A2</p>                                                                                                                                         |

.types and its creativity organizational to identify The student will be able -A3

Crisis management, its types and applications of the essence Definition -A4.

. Course specific skill objectives -B

administrative contemporary Familiarity with the importance and characteristics of -B1

. approaches

.institutions in Developing crisis management and knowledge management skills - B2

Developing the student's skills and enhancing his ability to convert paper procedures - B3

.studying an introduction to electronic administration into electronic ones by

. to manage using advanced methods Providing the student with the ability -B4

Teaching and learning methods

- Direct instruction (lecture) with the use of educational technology tools
- Class discussion and interaction through assignment of homework
- based learning strategy-Project

Evaluation methods

Periodic tests\*

Surprise tests\*

Classroom interaction and participation\*

Research assignments and reports\*

Practical and applied tests\*

based goals-Emotional and value -C

belonging to a team within the organization and the desire to Enhancing the spirit of -A1

.provide the best

Enhancing the desire to compete to raise the educational level -A2

Enhancing the sense of belonging to the specialty and developing the desire to work in -A3

.utionsinformation instit

|                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Teaching and learning methods                                                                                                                                                                       |
| .1.Periodic field visits to administrative and technical institutions                                                                                                                               |
| Coexistence, actual practice, and interaction with workers through practical application ( .2 .ng with the beneficiariessummer training) that the student undertakes by livi                        |
| Psychological and emotional stimulation through open and direct discussions with .3 .students                                                                                                       |
| General and transferable skills (other skills related to employability and personal -D .(development                                                                                                |
| .Ils of writing research and reportsTeaching the student the ski -D1                                                                                                                                |
| Teaching the student how to link the theoretical aspect with the practical application that -D2 .he will practice at work                                                                           |
| Teaching the student how to deal with information sources, analyze them, and deduce -D3 d a summary of the information he obtains as a result of the objective analysis of and recor .these sources |

#### 10. Course structure

| Evaluation method                            | Teaching method                    | Unit name/topic                    | Required learning outcomes        | watches | week       |
|----------------------------------------------|------------------------------------|------------------------------------|-----------------------------------|---------|------------|
| Interaction and participation                | Lectures and discussion            | Concept, importance and objectives | Knowledge Management Introduction | 4       | the first  |
| Interaction and participation                | Lectures and discussion            | Knowledge management processes     | Knowledge Management              | 4       | the second |
| Interact, participate and .test daily        | Lectures and discussion            | Knowledge management models        | Knowledge management models       | 4       | the third  |
| Interaction, engagement, up -and pop testing | Lectures and practical application | Knowledge management strategies    | Strategies                        | 4       | Fourth     |
| Interaction, participation,                  | Lectures and                       | Knowledge management               | Knowledge management              | 4       |            |

|                                                        |                                                |                                                             |                                                |   |            |
|--------------------------------------------------------|------------------------------------------------|-------------------------------------------------------------|------------------------------------------------|---|------------|
| and semester testing                                   | discussion                                     | success factors                                             | and factors                                    |   | Fifth      |
| Interaction, Participation, and Reports                | Lectures, discussion and practical application | Driving forces of knowledge management                      | Knowledge management and motivation            | 4 | Sixth      |
| Interaction, participation, and duties                 | Lectures, discussion and practical application | The concept, importance and objectives of crisis management | Crisis management                              | 4 | Seventh    |
| Interaction, participation, and duties                 | Lectures, discussion and practical application | Characteristics and types of crisis management              | Types of crises                                | 4 | The eighth |
| Presenting and explaining reports through presentation | ,Lectures discussion and practical application | Causes of the crisis, advantages and disadvantages          | Factors affecting the occurrence of the crisis | 4 | Ninth      |
| Interaction, participation, and duties                 | Lectures, discussion and practical application | Stages and hedging of .crises                               | Crisis management stages                       | 4 | tenth      |
| Daily test                                             | Lectures and discussion                        | Concept, importance and objectives                          | Organizational creativity                      | 4 | eleventh   |
| Interaction and participation                          | Lectures and discussion                        | Characteristics and stages                                  | organizational creativity characteristics      | 4 |            |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                       |                                                                                           |                                                |   |                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------------|------------------------------------------------|---|---------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                       |                                                                                           |                                                |   | twelfth                                                                   |
| Reports                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Practical application | Levels and models of organizational creativity                                            | Levels and models of organizational creativity | 4 | thirteenth                                                                |
| Presenting and explaining reports through presentation                                                                                                                                                                                                                                                                                                                                                                                                                                      | Practical application | Administrative empowerment<br><br>Concept, importance, objectives, types and applications | Administrative empowerment                     | 4 | fourteenth                                                                |
| 11. infrastructure                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                       |                                                                                           |                                                |   |                                                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                       |                                                                                           |                                                |   | Required textbooks                                                        |
| Salah Religion Kubaisi-Al ,2005 Management , knowledge , The organization Arabic development For Administrative For research And studies.<br>. ,Abdullah Nahida ,Ismael 2006 , role Operations administration knowledge in Strengthening Feature ,competitiveness magazine Research ,Futuristic Issue13 , p. 38<br>- Sites Internet The<br>-1 Gift Hussein ,Effendi bearings New in Management between Theory ,And the application ,Cairo center Research ,Politics university Cairo, .1994 |                       |                                                                                           |                                                |   | - Main -2 references (sources)                                            |
| in the specialty Scientific journals                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                       |                                                                                           |                                                |   | -A Recommended books and ) references Scientific journals, ( ....,reports |
| Specialized websites                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                       |                                                                                           |                                                |   | c Electroni -B references, ...websites                                    |
| 12. Curriculum Development Plan                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                       |                                                                                           |                                                |   |                                                                           |
| The development plan for this course aims to update the content by incorporating the latest To enhance students' .leadership and sustainability developments in management, such as                                                                                                                                                                                                                                                                                                         |                       |                                                                                           |                                                |   |                                                                           |

understanding of basic concepts and their practical applications, the plan will focus on life case studies and practical exercises to train students-adding real.

ishing houses to the known international publ-from well resources Providing modern scientific .college library, which enhances the vocabulary of the lessons given to the college



## Course Description Form / Total Quality Management

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Educational institution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Mosul Technical Administrative College                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 2. Scientific Department / Center                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Information Technology Management Department/Fourth Stage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 3. Course Name/Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Total Quality Management:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 4. Available attendance forms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Weekly                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 5. semester/year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Courses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 6. Number of study hours (total)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 4 hours per week for 15 weeks (semester)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 7. Date this description was prepared                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 1/9/2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 8. Course objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <p>– Providing the student/trainee with a deep understanding of the concepts of Total Quality Management, in terms of its origin, development, basic principles, and importance in contemporary business environments.</p> <p>2. Develop the ability to use quality tools and techniques to improve processes and services within organizations.</p> <p>3. Enhancing analytical and critical thinking among students by analyzing quality applications in local and international organizations.</p> <p>4. Linking the concepts of total quality to continuous improvement and customer satisfaction, highlighting the relationship between quality and competitiveness.</p> <p>5. Qualifying students to apply quality strategies in various workplaces, in accordance with</p> |

international standards such as ISO 9001 and EFQM.

6. Applying the TQM system in a real or hypothetical scenario and analyzing its results.

7. Comparing international quality standards (such as ISO 9001) and assessing organizations' compliance with them.

8. Proposing quality improvement plans based on measurement and monitoring methods.

9. Course outcomes, teaching, learning and assessment methods

### **A- Cognitive objectives**

A1-After completing the program, the student is expected to be able to:

- Understanding the basic principles of Total Quality Management, its origins and development.
- Identify international quality models (such as the Deming model, the Malcolm Baldrige model, and EFQM).
- Familiarity with quality management systems such as ISO 9001 and the basics of international specifications.
- Analyzing the relationship between quality and organizational processes.
- Realizing the importance of quality in improving institutional performance and achieving customer satisfaction.

### **B- Course skill objectives.**

B1 The student is expected to acquire applied skills in:

- Analyze data and make decisions based on statistical information (e.g., use of the seven quality control tools).

Design and implement quality improvement strategies.

Evaluating the performance of organizations through quality-related performance indicators.

Using techniques such as Six Sigma and Lean Management to improve efficiency and reduce waste.

Preparing professional quality reports and performance gap analysis.

### **Evaluation methods**

\*Periodic tests

\*Surprise tests

\*Classroom interaction and participation

\*Research assignments and reports

\*Practical and applied tests

C- Emotional and value-based goals

A1- Enhancing the spirit of belonging to a team within the organization and the desire to provide the best.

A2- Enhancing the desire to compete to raise the educational level

A3- Enhancing the sense of belonging to the specialty and developing the desire to work in information institutions.

Teaching and learning methods

1. Periodic field visits to administrative and technical institutions.

2. Coexistence, actual practice, and interaction with workers through practical application (summer training) that the student undertakes by living with the beneficiaries.

3. Psychological and emotional stimulation through open and direct discussions with students.

D - General and transferable skills (other skills related to employability and personal development).

D1- Teaching the student the skills of writing research and reports.

D2- Teaching the student how to link the theoretical aspect with the practical application that he will practice at work.

D3- Teaching the student how to deal with information sources, analyze them, and deduce and record a summary of the information he obtains as a result of the objective analysis of these sources.

D4- Teaching the student how to design databases and websites and implement programs to serve various scientific fields.

#### 10. Course structure

| Evaluation method | Teaching method              | Unit name/topic              | Required learning outcomes          | watches | week             |
|-------------------|------------------------------|------------------------------|-------------------------------------|---------|------------------|
| Daily oral test   | theoretical presentation and | Strategic planning, customer | Total Quality Management Principles | 4 hours | First and second |

|                    |                                                        |                                                                                                                                                                                                  |                                           |         |                     |
|--------------------|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|---------|---------------------|
|                    | explanatio<br>n                                        | focus,<br>supplier<br>involveme<br>nt, senior<br>manageme<br>nt support,<br>error<br>prevention<br>, work<br>teams,                                                                              |                                           |         |                     |
| Daily oral<br>test | theoretical<br>presentati<br>on and<br>explanatio<br>n | Training<br>and<br>education,<br>continuous<br>improvem<br>ent,<br>measurabl<br>e quality,<br>employee<br>engageme<br>nt and<br>participati<br>on, focus<br>on<br>processes,<br>benchmar<br>king | Total Quality<br>Management<br>Principles | 4 hours | Third and<br>fourth |
| Daily oral<br>test | theoretical<br>presentati<br>on and<br>explanatio<br>n | Historical<br>introductio<br>n, the<br>concept of<br>quality<br>circles, the<br>mechanis<br>m of<br>quality<br>circles,<br>quality<br>circles and<br>work                                        | Quality Circles                           | 4 hours | Fifth and<br>sixth  |

|                 |                                          |                                                                                                                                                                         |                           |         |                      |
|-----------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------|----------------------|
|                 |                                          | teams, requirements for implementing quality circles                                                                                                                    |                           |         |                      |
| Daily oral test | theoretical presentation and explanation | The concept of total quality management, researcher's views on the concept of total quality, the difference between traditional management and total quality management | Total Quality Management  | 4 hours | Seventh and eighth   |
| Daily oral test | theoretical presentation and explanation | Quality Job Deployment Tool Concept                                                                                                                                     | Total Quality Job Posting | 4 hours | Ninth and tenth      |
| Daily oral test | theoretical presentation and explanation | Steps to build a quality house (defining customer requirements)                                                                                                         | Quality Job Posting Tools |         | eleventh The twelfth |

|                 |                                          |                                                                                                                         |                                     |         |                           |
|-----------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------|---------|---------------------------|
|                 |                                          | nts, competitive evaluation, defining design requirements, relationship matrix, trade-off matrix, target value matrix). |                                     |         |                           |
| Daily oral test | theoretical presentation and explanation | What is the ISO system? Benefits of implementing ISO? Requirements for implementing ISO                                 | ISO 9001 Quality Management Systems | 4 hours | thirteenth and fourteenth |
| Daily oral test | theoretical presentation and explanation | Definition of sustainable development, origin, concept, (definition of sustainable development UNESCO, United           | sustainable development             | 4 hours | fifteenth                 |

|                                                                                                                                                  |  |                                                                                                                                                                                                |                                                                             |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--|--|
|                                                                                                                                                  |  | Nations Conferenc<br>e, World Commissio<br>n on Environme<br>nt and Developm<br>ent), goals, characteris<br>tics,<br>Indicators<br>and<br>implication<br>s of sustainabl<br>e developme<br>nt. |                                                                             |  |  |
| 11. Infrastructure                                                                                                                               |  |                                                                                                                                                                                                |                                                                             |  |  |
|                                                                                                                                                  |  |                                                                                                                                                                                                | 1- Required textbooks                                                       |  |  |
| Quality principles, tools,<br>and case analysis.<br><br>3. Total Quality<br>Management: A Strategic<br>Approach<br><br>Author: Dr. Mohamed Fawzy |  |                                                                                                                                                                                                | 2- Main references (sources)                                                |  |  |
| Scientific journals in the fields of information<br>technology                                                                                   |  |                                                                                                                                                                                                | A- Recommended books and references<br>(scientific journals, reports, etc.) |  |  |
| Specialized websites                                                                                                                             |  |                                                                                                                                                                                                | B - Electronic references, websites...                                      |  |  |
| 12. Curriculum Development Plan                                                                                                                  |  |                                                                                                                                                                                                |                                                                             |  |  |
| - Meeting with the faculty at the end of each semester to review the curricula and how to develop                                                |  |                                                                                                                                                                                                |                                                                             |  |  |

them, add new lessons to the current curricula, record the course content in the curriculum form annually, and propose any changes or amendments to the curricula for approval by the College Council and subsequently by the University Council, in accordance with university directives. The curricula are also published and documented on the college website, and lectures are uploaded electronically to the website.

Providing the college library with modern scientific books from well-known international publishing houses, which enhance the vocabulary of the lessons given to the college.



## Course Description Form- Artificial Intelligence and Expert Systems

|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Artificial Intelligence and Expert Systems                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2. Course Code:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| ELM403                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 3. Semester / Year:                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Fall Semester –2026                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Description Preparation Date:                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 1/9/2025                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 5. Available Attendance Forms:                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| In-person                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 6. Number of Credit Hours (Total) / Number of Units (Total)         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 60 hours                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 7. Course administrator's name (mention all, if more than one name) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Dr. Radhwan Yousif Aljawadi (radwan.aljawadi@ntu.edu.iq)            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 8. Course Objectives                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Course Objectives</b>                                            | <p>This course introduces students to the principles and foundations of Artificial Intelligence (AI), focusing on intelligent agents, problem-solving, and reasoning. The second part emphasizes Expert Systems, their architecture, inference engines, and knowledge representation techniques. Students will gain practical experience by designing simple expert systems and AI problem-solving models.</p> <p><b>Course Objectives:</b></p> <ul style="list-style-type: none"> <li>Understand core concepts and history of AI</li> <li>Explore AI techniques including search strategies, reasoning, and learning</li> <li>Analyze structure and function of Expert Systems</li> <li>Apply AI methods to real-world problems</li> </ul> |
| 9. Teaching and Learning Strategies                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strategy</b> | <p>A. Knowledge:</p> <ul style="list-style-type: none"> <li>- Understand structure and functioning of AI systems</li> <li>- Identify symbolic vs. sub-symbolic approaches</li> <li>- Understand expert systems and applications</li> </ul> <p>B. Skills:</p> <ul style="list-style-type: none"> <li>- Design simple expert systems</li> <li>- Apply reasoning and search methods</li> <li>- Develop intelligent agents</li> </ul> <p>C. Ethics:</p> <ul style="list-style-type: none"> <li>- Awareness of AI ethics</li> <li>- Promote fairness and responsibility</li> </ul> |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 10. Course Structure

| Week | Hours | Required Learning Outcomes          | Unit or subject name                                                                     | Learning method                    | Evaluation method                             |
|------|-------|-------------------------------------|------------------------------------------------------------------------------------------|------------------------------------|-----------------------------------------------|
| 1    | 4     | Knowledge and Practical Application | Introduction to Artificial Intelligence: History and Applications                        | Lectures and Discussion            | Interaction and participation                 |
| 2    | 4     | Knowledge and Practical Application | Intelligent Agents and Environments, Knowledge Representation, Types of Logic            | Lectures and Discussion            | Interaction and participation                 |
| 3    | 4     | Knowledge and Practical Application | Propositional and Predicate Logic                                                        | Lectures and Discussion            | Interaction, participation, and daily testin  |
| 4    | 4     | Knowledge and Practical Application | Undirected Search (BFS, DFS), Directed Search (A*, Greedy), Genetic Algorithms, Examples | Lectures and Practical Application | Interact and Participate, and a Surprise Quiz |
| 5    | 4     | Knowledge                           |                                                                                          | Lectures and                       | Interaction,                                  |

|    |   |                                     |                                                               |                                                 |                                                        |
|----|---|-------------------------------------|---------------------------------------------------------------|-------------------------------------------------|--------------------------------------------------------|
|    |   | and Practical Application           | Fuzzy Logic<br>Fuzzy Mathematics                              | Discussion                                      | Participation, and Quarterly Quiz                      |
| 6  | 4 | Knowledge and Practical Application | Application Examples of Fuzzy Logic                           | Lectures and Discussion                         | Interaction, Participation, and Repot                  |
| 7  | 4 | Knowledge and Practical Application | Overview of Machine Learning                                  | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments            |
| 8  | 4 | Knowledge and Practical Application | Artificial Neural Networks                                    | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments            |
| 9  | 4 | Knowledge and Practical Application | Application Examples                                          | Lectures, Discussion, and Practical Application | Presenting and Explaining Reports Through Presentation |
| 10 | 4 | Knowledge and Practical Application | Expert Systems                                                | Lectures, Discussion, and Practical Application | Interaction, Participation, and Assignments            |
| 11 | 4 | Knowledge and Practical Application | Knowledge Acquisition, Inference Engines, and Knowledge Bases | Lectures, Discussion, and Practical Application | Daily Quiz                                             |
| 12 | 4 | Knowledge and Practical Application | Applications of Expert Systems                                | Lectures, Discussion, and Practical Application | Interaction and Participation                          |
| 13 | 4 | Knowledge and Practical Application | AI Tools                                                      | Lectures, Discussion, and Practical Application | Reports                                                |
| 14 | 4 | Knowledge and Practical Application | AI Ethics and Challenges                                      | Lectures, Discussion, and Practical             | Presenting and explaining reports                      |

|                                                                                                                                                                     |   |                                     |                                                                                                                                                                                                                           |                                                 |                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|------------------------|
|                                                                                                                                                                     |   |                                     |                                                                                                                                                                                                                           | Application                                     | through a presentation |
| 15                                                                                                                                                                  | 4 | Knowledge and Practical Application | Project Presentation and Review                                                                                                                                                                                           | Lectures, Discussion, and Practical Application |                        |
| <b>11. Course Evaluation</b>                                                                                                                                        |   |                                     |                                                                                                                                                                                                                           |                                                 |                        |
| Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc |   |                                     |                                                                                                                                                                                                                           |                                                 |                        |
| <b>12. Learning and Teaching Resources</b>                                                                                                                          |   |                                     |                                                                                                                                                                                                                           |                                                 |                        |
| Required textbooks (curricular books, if any)                                                                                                                       |   |                                     |                                                                                                                                                                                                                           |                                                 |                        |
| Main references (sources)                                                                                                                                           |   |                                     | <ul style="list-style-type: none"> <li>• Russell &amp; Norvig – Artificial Intelligence: A Modern Approach</li> <li>• Giarratano &amp; Riley – Expert Systems</li> <li>• Elaine Rich – Artificial Intelligence</li> </ul> |                                                 |                        |
| Recommended books and references (scientific journals, reports...)                                                                                                  |   |                                     |                                                                                                                                                                                                                           |                                                 |                        |
| Electronic References, Websites                                                                                                                                     |   |                                     | <p>Coursera<br/> <a href="https://www.coursera.org/">https://www.coursera.org/</a></p> <p>Kaggle<br/> <a href="https://www.kaggle.com/">https://www.kaggle.com/</a></p>                                                   |                                                 |                        |

## Course Description Form-Data Structures

|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Data Structures- (optional)                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. Course Code:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| ELM414                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. Semester / Year:                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Spring Semester –2026/Level 4                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Description Preparation Date:                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1/9/2025                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. Available Attendance Forms:                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| In-person                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. Number of Credit Hours (Total) / Number of Units (Total)         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 60 hours                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 7. Course administrator's name (mention all, if more than one name) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Radhwan Yousif Al-jawadi (radwan.aljawadi@ntu.edu.iq)               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 8. Course Objectives                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Course Objectives</b>                                            | <p><b>This course provides students with a solid understanding of data structures, their implementation, and their role in solving computational problems efficiently. Students will learn to evaluate, choose, and apply suitable data structures for various applications.</b></p> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>• <b>Understand fundamental concepts and importance of data structures.</b></li> <li>• <b>Develop problem-solving skills using data structures.</b></li> <li>• <b>Implement and manipulate key data structures in a programming language.</b></li> <li>• <b>Analyze and evaluate time and space complexity of algorithms.</b></li> </ul> |

|  |                                                                                                                     |
|--|---------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"> <li>• <b>Apply appropriate data structures to real-world problems</b></li> </ul> |
|--|---------------------------------------------------------------------------------------------------------------------|

## 9. Teaching and Learning Strategies

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strategy</b> | <p>A. Knowledge:</p> <ul style="list-style-type: none"> <li>• Understanding arrays, linked lists, stacks, queues, trees, graphs, and advanced structures.</li> <li>• Recognizing performance trade-offs between structures.</li> </ul> <p>B. Skills:</p> <ul style="list-style-type: none"> <li>• Implementing data structures in code.</li> <li>• Debugging and optimizing programs.</li> </ul> <p>C. Application:</p> <ul style="list-style-type: none"> <li>• Solving real-world problems using appropriate structures.</li> <li>• Integrating data structures into algorithm design.</li> </ul> |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 10. Course Structure

| Week | Hours | Required Learning Outcomes        | Unit or subject name            | Learning method      | Evaluation method                              |
|------|-------|-----------------------------------|---------------------------------|----------------------|------------------------------------------------|
| 1    | 4     | Knowledge & Practical Application | Introduction to Data Structures | Lecture & Discussion | Interaction and participation                  |
| 2    | 4     | Arrays, Strings                   | Lecture & Lab                   | Assignments          | Interaction and participation                  |
| 3    | 4     | Linked Lists                      | Lecture & Lab                   | Assignments          | Interaction, participation, and daily testin   |
| 4    | 4     | Stacks                            | Lecture & Lab                   | Assignments          | Interact and Participate, and a Surprise Quiz  |
| 5    | 4     | Queues                            | Lecture & Lab                   | Assignments          | Interaction, Participation, and Quarterly Quiz |
| 6    | 4     | Recursion                         | Lecture & Lab                   | Assignments          | Interaction, Participation,                    |

|    |   |                           |                    |                   |                                                          |
|----|---|---------------------------|--------------------|-------------------|----------------------------------------------------------|
|    |   |                           |                    |                   | and Repot                                                |
| 7  | 4 | Midterm Review & Exam     | Lecture & Practice | Midterm Exam      | Interaction, Participation, and Assignments              |
| 8  | 4 | Trees                     | Lecture & Lab      | Assignments       | Interaction, Participation, and Assignments              |
| 9  | 4 | Binary Search Trees       | Lecture & Lab      | Assignments       | Presenting and Explaining Reports Through Presentation   |
| 10 | 4 | Heaps                     | Lecture & Lab      | Assignments       | Interaction, Participation, and Assignments              |
| 11 | 4 | Hashing                   | Lecture & Lab      | Assignments       | Daily Quiz                                               |
| 12 | 4 | Graphs                    | Lecture & Lab      | Assignments       | Interaction and Participation                            |
| 13 | 4 | Advanced Graph Algorithms | Lecture & Lab      | Assignments       | Reports                                                  |
| 14 | 4 | Review & Integration      | Lecture & Practice | Review Activities | Presenting and explaining reports through a presentation |
| 15 | 4 | Review & Integration      | Lecture & Practice | Review Activities |                                                          |

## 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

## 12. Learning and Teaching Resources

|                                                                    |                                                                                                                                                                                   |
|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any)                      |                                                                                                                                                                                   |
| Main references (sources)                                          | <ul style="list-style-type: none"> <li>•Cormen et al., Introduction to Algorithms</li> <li>•Narasimha Karumanchi, Data Structures and Algorithmic Thinking with Python</li> </ul> |
| Recommended books and references (scientific journals, reports...) |                                                                                                                                                                                   |
| Electronic References, Websites                                    | •visualgo.net, pythontutor.com, LeetCode,                                                                                                                                         |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | HackerRank |
| development plan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |
| <p>The development plan for this course aims to update and enhance the scientific content to keep pace with the latest advancements in the field of data structures and their practical applications. The plan focuses on:</p> <p>Adding updated content that includes advanced data structures such as Trie, Segment Tree, and Fenwick Tree, and linking them to real-world applications in data management systems and artificial intelligence.</p> <p>Improving teaching methods to be more interactive through group discussions, teamwork, and project-based learning (PBL).</p> <p>Linking the course to modern applications in areas such as data analysis, cybersecurity, and software development, to highlight the importance of data structures in industry.</p> |            |



(Course Description Form)

|                                                                                                                                                                                                                                                                                                                     |                                                                        |                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| 1-Teaching Institution                                                                                                                                                                                                                                                                                              |                                                                        |                                                                                 |
| <b>Administrative Technical College / Mosul</b>                                                                                                                                                                                                                                                                     |                                                                        |                                                                                 |
| 2- University Department/Centre                                                                                                                                                                                                                                                                                     |                                                                        |                                                                                 |
| Northern Technical University / Department: Information techniques management                                                                                                                                                                                                                                       |                                                                        |                                                                                 |
| 3-Course title/code                                                                                                                                                                                                                                                                                                 |                                                                        |                                                                                 |
| English Language /NTU400                                                                                                                                                                                                                                                                                            |                                                                        |                                                                                 |
| 4- Available forms of attendance                                                                                                                                                                                                                                                                                    |                                                                        |                                                                                 |
| Presence/face to face                                                                                                                                                                                                                                                                                               |                                                                        |                                                                                 |
| 5- Semester/Year                                                                                                                                                                                                                                                                                                    |                                                                        |                                                                                 |
| Fall Semester/ Fourth level /2026                                                                                                                                                                                                                                                                                   |                                                                        |                                                                                 |
| 6-Number of hours tuition (total)                                                                                                                                                                                                                                                                                   |                                                                        |                                                                                 |
| 30 hours                                                                                                                                                                                                                                                                                                            |                                                                        |                                                                                 |
| 7- Date of production/revision of this specification                                                                                                                                                                                                                                                                |                                                                        |                                                                                 |
| 1/9/2025                                                                                                                                                                                                                                                                                                            |                                                                        |                                                                                 |
| 8-(Course Objectives )General Course Objectives                                                                                                                                                                                                                                                                     |                                                                        |                                                                                 |
| 1 .Provide students with basic concepts related to the use of English language<br>2. Provide students with basic vocabulary<br>3 .Enable the students to construct simple sentences.<br>4 .Enable the students to communicate effectively.<br>5. Provide students with the basic culture and literature of English. |                                                                        |                                                                                 |
| 1– Course outcomes, teaching, learning and assessment methods                                                                                                                                                                                                                                                       |                                                                        |                                                                                 |
| Learning Outcomes (LOS)                                                                                                                                                                                                                                                                                             | Learning and teaching methods                                          | Evaluation methods                                                              |
| 1The student learns about the nature of English language.                                                                                                                                                                                                                                                           | Theoretical lectures using educational tools (PowerPoint presentations | Daily and monthly tests                                                         |
| 2-To explain to construct sentences in English.                                                                                                                                                                                                                                                                     | Theoretical lectures                                                   | management Solving exercises within the lecture and assigning external homework |

|                                                                                                                                |                                           |                           |
|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|---------------------------|
| 3-Developing students' ability to communicate effectively. Provide student with the basic knowledge of culture and literature. | View the companies' work and achievements | Discussions and dialogues |
|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|---------------------------|

## 2- Course structure (theoretical and scientific vocabulary)

| Week       | Hours | Required learning outcomes       | Name of the unit/topic                | Teaching method | Evaluation method       |
|------------|-------|----------------------------------|---------------------------------------|-----------------|-------------------------|
| First      | 2     | Student understanding the lesson | Passive and active voices             | Lecture         | Daily and monthly tests |
| Second     | 2     | Student understanding the lesson | Present simple and continuous perfect | Lecture         | Daily and monthly tests |
| Third      | 2     | Student understanding the lesson | Past simple and continuous perfect    | Lecture         | Daily and monthly tests |
| fourth     | 2     | Student understanding the lesson | Conditional sentences: Advanced       | Lecture         | Daily and monthly tests |
| Fifth      | 2     | Student understanding the lesson | Function Language                     | Lecture         | Daily and monthly tests |
| Sixth      | 2     | Student understanding the lesson | Interrogative sentences               | Lecture         | Daily and monthly tests |
| Seventh    | 2     | Student understanding the lesson | Imperative and negative sentences     | Lecture         | Daily and monthly tests |
| The eighth | 2     | Student understanding the lesson | Writing                               | Lecture         | Daily and monthly tests |

|            |   |                                  |                                |         |                         |
|------------|---|----------------------------------|--------------------------------|---------|-------------------------|
| Ninth      | 2 | Student understanding the lesson | Reading                        | Lecture | Daily and monthly tests |
| tenth      | 2 | Student understanding the lesson | Speaking                       | Lecture | Daily and monthly tests |
| Eleventh   | 2 | Student understanding the lesson | Short story 1                  | Lecture | Daily and monthly tests |
| Twelfth    | 2 | Student understanding the lesson | Short story 2                  | Lecture | Daily and monthly tests |
| Thirteenth | 2 | Student understanding the lesson | Writing about different topics | Lecture | Daily and monthly tests |
| Fourteenth | 2 | Student understanding the lesson | Academic writing               | Lecture | Daily and monthly tests |
| Fifteen    | 2 | Student understanding of lesson  | General Exam                   | Lecture | Daily and monthly tests |

## 1– Curriculum development plan

### 2–Aligning learning outcomes with the National Qualifications Framework:

#### Framework:

\*Formulating clear and measurable learning outcomes.

\*Linking course outcomes to the skills and knowledge required by the labor market.

### 3– Developing teaching methods and techniques

\*Introducing active learning methods (such as problem–based learning, brainstorming, and P2 studies.

\*Using modern technology in presenting the material (such as e–learning, educational videos, simulations.

#### **4– Enhancing students' critical and analytical thinking skills:**

##### 2– infrastructure

|                                                                                                                                                                                                                                                  |                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Classrooms, laboratories and workshops                                                                                                                                                                                                           | Available                                                                                          |
| Required books and curriculum                                                                                                                                                                                                                    | Publications on English Language available in college library and the university's central library |
| Main references (sources)                                                                                                                                                                                                                        |                                                                                                    |
| Recommended books and references<br>New Headway Plus (Intermediate) ,<br>John and Liz Soars, Oxford<br>(Student’s Book)<br>New Headway Plus (Intermediate) ,<br>John and Liz Soars, Oxford<br>(Workbook)<br>(Scientific journals, reports,.....) | Scientific and Applied Research Projects                                                           |
| Electronic references and websites                                                                                                                                                                                                               | English language websites.                                                                         |

## Course Description Form 2026 (Systems Analysis)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Educational Institution: Mosul Technical College of Administration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2. Academic Department/Center: Department of Information Technology Management/Level One                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 3. Course Name / Code Systems Analysis / ELM405                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 4. Available Attendance Formats: Weekly                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 5. Semester/Year/ Fall Semester/2026                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 6. Number of Class Hours (Total): 60 Hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 7. Date of Preparation: June 30, 2026                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 8. Course Objectives: This course aims to provide a clear understanding of how to analyze systems—whether they are outdated and ineffective or newly developed, and whether they are manual, automated, or semi-automated. The student is expected to study the following stages: planning, analysis, design, implementation and testing, and operation and maintenance. The course offers students practical training opportunities across various sectors, enabling them to acquire system analysis skills in different stages.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 9. Course Outcomes, Teaching, Learning, and Evaluation Methods                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>A. Cognitive Objectives</b> <ul style="list-style-type: none"> <li>• A1: Understand the concept of system analysis and the roles of a system analyst.</li> <li>• A2: Identify levels of information within an organization and learn how to collect, analyze, and document them.</li> <li>• A3: Understand the steps and requirements of system design.</li> <li>• A4: Learn the criteria for evaluating available alternatives and selecting the optimal one.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>B. Skills-Based Objectives</b> <ul style="list-style-type: none"> <li>• B1: Understand the importance and elements of communication in system analysis and design.</li> <li>• B2: Ability to select and employ appropriate analysis tools for studying a specific system.</li> <li>• B3: Ability to understand and interpret system analysis tools, such as: <ul style="list-style-type: none"> <li>○ Decision Tables</li> <li>○ Flowcharts</li> <li>○ Gantt Charts</li> <li>○ Queuing Models</li> <li>○ Network Diagrams</li> </ul> </li> <li>• B4: Enable students to analyze systems and trace administrative problems using scientific and applied methods.</li> <li>• B5: Teach students to identify and compare different alternatives and select the most suitable one.</li> <li>• B6: Introduce students to effective communication methods within and outside the system at various levels.</li> <li>• B7: Encourage students to build professional relationships with stakeholders involved in the system.</li> <li>• B8: Train students to prepare research projects, deliver detailed presentations, and respond to related questions.</li> <li>• B9: Involve students in actively participating in teamwork to fulfill required tasks.</li> </ul> |
| <b>C. Emotional and Value-Based Goals</b> <ul style="list-style-type: none"> <li>• C1: Foster a sense of belonging to a team within the institution and a desire to give one's best.</li> <li>• C2: Encourage healthy competition to enhance academic performance.</li> <li>• C3: Reinforce students' sense of belonging to their field and inspire interest in working in information institutions.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>D. General and Transferable Skills (other skills related to employability and personal development).</b> <ul style="list-style-type: none"> <li>• D1: Teach students research and report writing skills</li> <li>• D2: Enable students to connect theoretical knowledge with practical applications in the workplace</li> <li>• D3: Teach students how to handle information sources, analyze them, and summarize extracted data through objective analysis</li> <li>• D4: Train students to design databases, websites, and implement programs that serve various scientific fields</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>E. Teaching and Learning Methods</b> <ul style="list-style-type: none"> <li>- Regular field visits to administrative and technical institutions</li> <li>- Real-world immersion and direct interaction with professionals during practical (summer) training</li> <li>- Psychological and emotional motivation through open discussions with students</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>F. Assessment Methods</b> <ul style="list-style-type: none"> <li>• Periodic tests</li> <li>• Pop quizzes</li> <li>• Classroom participation and interaction</li> <li>• Research assignments and reports</li> <li>• Practical and applied exams</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| 10. Course Structure |       |                                                                                                                                                     |                                                              |                          |                               |
|----------------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------|-------------------------------|
| Week                 | Hours | Intended Learning Outcomes                                                                                                                          | Unit / Topic                                                 | Teaching Method          | Assessment Method             |
| 1                    | 4     | Clear overview of course contents                                                                                                                   | Course Introduction, Group Assignments                       | Lecture and Discussion   | Participation                 |
| 2                    | 4     | Understanding system concepts: - Definition & characteristics - System levels                                                                       | System Concept                                               | Lecture and Discussion   | Participation                 |
| 3                    | 4     | - System boundaries - System functions                                                                                                              | System Components and Functions                              | Lecture and Discussion   | Participation + Daily Test    |
| 4                    | 4     | System levels and interactions                                                                                                                      | System Relationships                                         | Lecture + Practical      | Participation + Pop Quiz      |
| 5                    | 4     | - Definition of system analysis - Analysis procedures - Team formation - Roles of team members                                                      | System Analysis                                              | Lecture and Discussion   | Participation + Midterm Test  |
| 6                    | 4     | System Analysis Tools: - Org charts - Gantt chart - Network model - Queuing model - Decision tables - Flowcharts                                    | Analysis Tools: Structures                                   | Lecture + Practical      | Participation + Reports       |
| 7                    | 4     | System Analysis Tools: - Org charts - Gantt chart - Network model - Queuing model                                                                   | Tools: Gantt & Network                                       | Lecture + Practical      | Participation + Assignments   |
| 8                    | 4     | Tools: - Queuing - Decision tables - Flowcharts                                                                                                     | Tools: Queuing & Decisions                                   | Lecture + Practical      | Participation + Assignments   |
| 9                    | 4     | Tools: - Network model - Queuing model - Flowcharts                                                                                                 | Midterm: Presenting Diagrams                                 | Lecture + Practical      | Oral Presentation             |
| 10                   | 4     | Flowchart tools                                                                                                                                     | Tools: Flowcharts                                            | Lecture + Practical      | Participation + Assignments   |
| 11                   | 4     | Importance of communication in systems: - Concept, types, and forms - Effective communication elements - Info flow & feedback - Information sources | Communication                                                | Lecture and Discussion   | Daily Test                    |
| 12                   | 4     | Tenders and proposals: - Needs assessment - Preparing request documents - Tender formats - Proposal evaluation                                      | Tenders & Proposals                                          | Lecture and Discussion   | Participation                 |
| 13                   | 4     | Form design: - Basics - Elements - Uses - Common design flaws                                                                                       | Form Design                                                  | Practical                | Reports                       |
| 14                   | 4     | Coding and encoding: - Definition - Forms and types - Design principles                                                                             | Final Report Presentation                                    | Practical                | Oral Presentation             |
| 15                   | 5     | Business Ethics and Corporate Social Responsibility                                                                                                 | Define managerial ethics and corporate social responsibility | Lectures and discussions | Interaction and participation |
| 16                   | –     | Final Exam                                                                                                                                          | Assess overall understanding of course outcomes              | –                        | –                             |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>11. Infrastructure</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                        |
| <b>Required Textbooks</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <i>(Not specified)</i>                                                                                                                 |
| <b>Main References (Sources)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Saeed Ghaleb Yassin. <i>Analysis and Design of Information Systems</i> . Cairo: Dar Al-Manhaj Publishing & Distribution, 2000, 1st Ed. |
| <b>Recommended Books and References (Scientific Journals, Reports)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Scientific journals in the field of Information Technology                                                                             |
| <b>Electronic References and Websites</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Specialized websites in the field                                                                                                      |
| <b>12. Course Development Plan</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                        |
| <ul style="list-style-type: none"> <li>Holding regular meetings with the teaching staff at the end of each semester to evaluate current syllabi, suggest updates, and incorporate new lessons. These updates are documented in the course description forms and submitted for approval by the College Council and University Council as per university directives. The curricula are then published and made available online, with lectures uploaded electronically.</li> <li>Supplying the college library with the latest scientific books from reputable international publishers that support course content.</li> </ul> |                                                                                                                                        |

### Course Description Form

|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Scientific research methodology                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. Course Code:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| NTU 410                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. Semester / Year:                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Level 4 (Fourth Year) /2026                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. Description Preparation Date:                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1/9/2025                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. Available Attendance Forms:                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Mandatory/weekly                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 6. Number of Credit Hours (Total) / Number of Units (Total)         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 30 hours/2 units                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 7. Course administrator's name (mention all, if more than one name) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Name Prof. Dr. Mahmood Khleef                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 8. Course Objectives                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Course Objectives                                                   | <p>By the end of the course, the student is expected to be able to:</p> <ol style="list-style-type: none"> <li>1. Explain the concept of scientific research, its objectives, and its importance in solving scientific and applied problems.</li> <li>2. Distinguish between different types of research and scientific methodologies, and select the appropriate methodology for their research topic.</li> <li>3. Select and formulate a clear research problem, defining suitable objectives and hypotheses.</li> <li>4. Search reliable scientific sources and references, and prepare a structured literature review.</li> <li>5. Design a comprehensive scientific research plan according to sound methodological principles.</li> <li>6. Select and practically apply the appropriate data collection tool.</li> <li>7. Analyze data using appropriate statistical methods and analysis software.</li> </ol> |



|                                     |                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                              |                                                                                                                                                                                                           |                                            |                                        |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------------------------|
|                                     | <div>8. Discuss results, relate them to objectives and hypotheses, and provide practical, scientific recommendations.</div> <div>9. Write the scientific research in correct academic style, adhering to research ethics and proper referencing.</div> <div>10. Prepare a publishable research paper for submission to a peer-reviewed scientific journal and present it formally.</div> |                                                                                                                                                                                                                              |                                                                                                                                                                                                           |                                            |                                        |
| 9. Teaching and Learning Strategies |                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                              |                                                                                                                                                                                                           |                                            |                                        |
| Strategy                            | <div>1. Interactive lectures</div> <div>2. Project-based learning</div> <div>3. Teamwork</div> <div>4. Problem-based learning</div> <div>5. Practical workshops</div> <div>6. Presentations and classroom discussions</div> <div>7. Blended e-learning</div>                                                                                                                             |                                                                                                                                                                                                                              |                                                                                                                                                                                                           |                                            |                                        |
| 10. Course Structure                |                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                              |                                                                                                                                                                                                           |                                            |                                        |
| Week                                | Hours                                                                                                                                                                                                                                                                                                                                                                                    | Required Learning Outcomes                                                                                                                                                                                                   | Unit or subject name                                                                                                                                                                                      | Learning method                            | Evaluation method                      |
| 1                                   | 2                                                                                                                                                                                                                                                                                                                                                                                        | The student should be able to explain the concept, importance, and characteristics of scientific research; distinguish between research and reports; and explain the role of scientific research in sustainable development. | <b>Introduction to Scientific Research:</b><br>Definition, importance, characteristics of good research, difference between research and reports, role of scientific research in sustainable development. | Interactive lecture + classroom discussion | Classroom participation and discussion |

|   |   |                                                                                                                                                                    |                                                                                                                                                                                      |                                                       |                                                               |
|---|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|---------------------------------------------------------------|
| 2 | 2 | The student should classify types of scientific research (basic, applied, descriptive, experimental, analytical, case studies) and determine the use of each type. | <b>Types of Research:</b> Basic, applied, descriptive, experimental, analytical, and case studies.                                                                                   | Interactive lecture + practical examples              | Daily short oral quiz                                         |
| 3 | 2 | The student should explain how to select a research topic and clearly formulate the research problem, mentioning its key elements.                                 | <b>Choosing a Research Topic and Formulating the Problem:</b> How to choose an appropriate topic, defining and formulating the research problem, components of the research problem. | Practical workshop + group activity                   | Group activity assessment (choosing a research topic)         |
| 4 | 2 | The student should formulate precise research objectives, develop suitable hypotheses, and explain the difference between hypotheses and research                  | <b>Formulating Research Objectives and Hypotheses:</b><br>Precise formulation of research objectives, types of research hypotheses, difference between                               | Individual practical application + student discussion | Individual assignment (formulating objectives and hypotheses) |

|   |   |                                                                                                                                       |                                                                                                                                                                                                         |                                                        |                                                     |
|---|---|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------|
|   |   | questions.                                                                                                                            | hypotheses and research questions.                                                                                                                                                                      |                                                        |                                                     |
| 5 | 2 | The student should search various scientific sources (books, articles, theses) and use reference management tools like Mendeley.      | <b>Scientific Sources:</b> Methods for searching scientific sources (books, articles, theses), using digital libraries, searching via Google Scholar, managing references using software like Mendeley. | Training on database searching + research assignment   | Assignment for collecting and referencing sources   |
| 6 | 2 | The student should analyze previous studies, identify research gaps, and write a structured literature review.                        | <b>Review of Previous Studies:</b> How to analyze previous studies, identify research gaps, and write a literature review.                                                                              | Scientific article analysis + classroom discussion     | Literature review summarization exercise            |
| 7 | 2 | The student should choose the appropriate research methodology and apply different data collection tools according to research needs. | <b>Research Methodologies and Data Collection Tools:</b> Selecting the appropriate research methodology (descriptive, experimental, analytical), data collection tools (questionnaire,                  | Practical activity for designing data collection tools | Evaluation of student-prepared data collection tool |

|    |   |                                                                                                                                             |                                                                                                                                                                           |                                                       |                                             |
|----|---|---------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|---------------------------------------------|
|    |   |                                                                                                                                             | interview, observation, experiments).                                                                                                                                     |                                                       |                                             |
| 8  | 2 | The student should design a comprehensive research plan including objectives, hypotheses, methodology, tools, and a timeline.               | <b>Designing the Research Plan:</b> Preparing the research plan (introduction, objectives, hypotheses, methodology, tools, timeline), writing and formatting it properly. | Research plan preparation workshop + feedback session | Preliminary evaluation of the research plan |
| 9  | 2 | The student should explain the concepts of population and sample, determine the appropriate sampling method, and calculate sample size.     | <b>Population and Sampling:</b> Defining population and sample, sampling methods (random, stratified, purposive), calculating sample size and its impact on results.      | Lecture + practical application on sampling           | Short daily quiz on sampling and population |
| 10 | 2 | The student should use basic statistical analysis methods to present data using SPSS or Excel, with results displayed in tables and charts. | <b>Data Analysis and Results Presentation:</b> Statistical analysis methods, graphical representation, using SPSS and Excel, presenting results in tables and             | Practical training using SPSS/Excel                   | Evaluation of mini data analysis report     |

|    |   |                                                                                                                                   |                                                                                                                                                                                                            |                                                                             |                                                      |
|----|---|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|------------------------------------------------------|
|    |   |                                                                                                                                   | charts.                                                                                                                                                                                                    |                                                                             |                                                      |
| 11 | 2 | The student should discuss results, relate them to previous studies, and formulate clear and applicable recommendations.          | <b>Discussion of Results and Recommendations:</b><br>How to interpret results, relate them to previous studies, formulate conclusions and practical recommendations                                        | Classroom discussion of real results + group activity                       | Activity for discussing results and recommendations  |
| 12 | 2 | The student should write the scientific research report in standard academic format following its main components.                | <b>Scientific Research Writing in Academic Format:</b><br>Structure of the research paper (title, abstract, introduction, methodology, results, discussion, recommendations, references), research ethics. | Research report writing workshop + review                                   | Preliminary assessment of the written research draft |
| 13 | 2 | The student should prepare a publishable research paper, select an appropriate journal, recognize predatory journals, and explain | <b>Scientific Publishing in Peer-Reviewed Journals:</b> How to prepare a paper for publication, choosing the appropriate journal (Scopus, Web of                                                           | Specialized lecture on scientific publishing + analysis of published papers | Evaluation of a publishable research paper           |

|                                                                                                   |   |                                                                                                                                                                            |                                                                                                                                                                             |                                           |                                                            |
|---------------------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|------------------------------------------------------------|
|                                                                                                   |   | submission steps and dealing with reviewers.                                                                                                                               | Science), identifying predatory journals, submission process, handling reviewers' comments, authorship and intellectual property rights.                                    |                                           |                                                            |
| 14                                                                                                | 2 | The student should deliver a clear research presentation, participate in discussing and evaluating peers' presentations, and correct methodological and scientific errors. | <b>Student Research Presentations and Discussions:</b><br>Students present mini research projects, discuss their methodology and scientific content, correct common errors. | Student presentations + group discussions | Assessment of presentation and research project discussion |
| 15                                                                                                | 2 | The student should demonstrate understanding of the course content by successfully passing the final exam.                                                                 | <b>Final Evaluation</b>                                                                                                                                                     | Final exam                                | Final exam + final project evaluation                      |
| 11. Course Evaluation                                                                             |   |                                                                                                                                                                            |                                                                                                                                                                             |                                           |                                                            |
| (Grade out of 100)                                                                                |   |                                                                                                                                                                            |                                                                                                                                                                             |                                           |                                                            |
| 1. Classroom participation and weekly activities: 10%<br>2. Individual and group assignments: 10% |   |                                                                                                                                                                            |                                                                                                                                                                             |                                           |                                                            |

3. Periodic short quizzes (at least two): 10%
4. Research presentation and discussion: 10%
5. Final written exam: 60%

## 12. Learning and Teaching Resources

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|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any)                      |                                                                                                                                          |
| Main references (sources)                                          | Lectures on the Methodology and Philosophy of Scientific Research,<br>Professor Dr. Iyad Youssef Al-Hajj Ismail,<br>First Edition, 2019. |
| Recommended books and references (scientific journals, reports...) |                                                                                                                                          |
| Electronic References, Websites                                    |                                                       |