MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

principles of economic

Module Information معلومات المادة الدراسية				
Module Title	Principles of economic		**Module Delivery**	
Module Type	S		☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☒ Seminar	
Module Code	TCMM107			
ECTS Credits	6			
SWL (hr/sem)	150			
Module Level	1		**Semester of Delivery**	1
Administering Department	Acc. techniques		**College**	TCMM
Module Leader	Dina Ahmad Omar		**e-mail**	dinaao@ntu.edu.iq
Module Leader's Acad. Title	Professor.dr		**Module Leader's Qualification**	Prd.dr
Module Tutor	Dina Ahmad Omar		**e-mail**	dinaao@ntu.edu.iq
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Scientific Committee Approval Date			**Version Number**	1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	It enables us to know how the economic system works, at least in its major outlines. The mutual relationships between wages, prices, taxes, government spending, exports, imports, and others should be followed with careful analysis, because they are not completely clear. Therefore, studying these relationships leads to knowing how the economic system performs its various functions and how economic problems arise.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• Understand **AI Fundamentals**: - Understanding the basics of economics: - How to use economics as a guide or guide for action. The reasons are clear and the main goal is economic analysis. To work - And learn about the importance of economic theory in formulating micro policies Knowledge of theoretical and mathematical applications of economic theory. • **Problem Solving and Search**: • By understanding this science, you will be able to know the mechanisms of how the market works, and build an in-depth idea about the economy. • You can also acquire more skills in statistics, which makes you better suited to solve economic problems.

	• You learn through it to communicate arguments related to the economy to others effectively, and this is useful in teaching others and practicing what is learned in all fields.
	• The ability to apply what has been learned in situations that require it, such as facing public policy problems, which makes the learner become effective over time and have a higher level of awareness.
	• **Knowledge Representation**:
	- Differentiating between macroeconomics, which is concerned with economics and its applications as a whole, and microeconomics, which is concerned with economic activities and smaller entities. Knowing the available opportunities and comparing between them, any purchase or investment selection process will be based on comparison and preferring the best option.
	-The importance of developing the economy and raising the standard of living of individuals, which contributes to raising the gross domestic product. Resistance to inflation at abnormal levels, as well as economic contraction.
	• **Machine Learning Techniques**:
	  • Evaluate machine learning models using appropriate metrics and techniques.
	• **Deep Learning**:
	• Building and training students to learn about the market mechanism
	• Detailing the behavioral goal and educational outcome.
	• Addressing the economic problem:
	  - Developing the economy and raising the standard of living of individuals, which contributes to raising the gross domestic product.

	Resistance to inflation at abnormal levels, as well as economic contraction. - Following up on government financial policies, and reviewing spending and tax rates, to resist the damage of economic setbacks. • The economic vision: • Explain the principles of economics. • Implementation of the economic vision to reveal the economic problem and address it. • Economic planning and decision making: • Contributing to increasing per capita income and economic growth. • Solve the problem of economic scarcity using alternatives. • **Reinforcement Learning**: The ability to apply what has been learned in situations that require it, such as facing public policy problems, which makes the learner become effective over time and have a higher level of awareness.
Indicative Contents المحتويات الإرشادية	**Week 1:** Introduction to economics Concepts of economics and the economic problem. **Week 2:** Subtitles - Economic concepts - Why do we study economics? - Types of economic analysis. **Week 3:** Law of demand and elasticities of demand. - Demand and supply curves/elasticities. - Engel's Law/exceptional cases of demand. **Week 4:** Consumer behavior theory

	- Imbalance due to changes in the factors determining both supply and demand together. - The concept of consumer behavior - Utility theory/marginal utility/law of diminishing utility Consumer equilibrium **Week 5:** Equilibrium: the interaction of demand and supply - Changes in the balance/imbalance that occur in the determinants of demand - Changes in the balance/imbalance that occur in the determinants of supply - Imbalance due to changes in the factors determining both supply and demand together. **Week 6:** Indifference curves: - The concept of indifference curves. - Properties of indifference curves. - Applications of indifference curves. - Law of marginal utility. **Week 7:** Production theory: - Conceptual framework of production theory - Forms of production - Production functions - Production elements - A. The relationship between total product and marginal product. - The relationship between marginal product and average product. - Stages of diminishing returns. - Production functions in the long run.

	- Isometric output curves/stages of production in the long-run function. **Week 8:** The variable factor of production (L) and the volume of production (Q) assuming that all other factors of production are constant. - The relationship between total product and marginal product. -The relationship between marginal product and average product. -Stages of diminishing returns. - Production functions in the long run. -Isometric output curves/stages of production in the long-run function. **Week 9:** Cost theory -Conceptual framework of costs. -Factors determining economic costs. -Costs and time. **Week 10:** Elements of indirect costs of all kinds, whether production, marketing, or administrative, are included in the income statement as time expenses. Average variable cost curve . .Average total cost curve. -The relationship between average total costs and average variable costs. **Week 11:** Production and cost curves. **Week 12:** Market Economic concept. -Conceptual framework of markets. −Market functions. −Types of markets How markets work. −The invisible hand/forms of the market economy. **Week 13:** Types of markets:

	- Perfectly competitive market . −Monopoly market . −Oligopolistic market . −Complete monopoly/its causes and origins . **Week 14: National income and national product.** −Conceptual framework of national income and national product . - Methods of calculating gross national product/methods of calculating national income. **Week 15:** Conceptual framework of globalization . −areas of globalization Pros and cons of globalization. **Total hrs = 200 = SSWL - (Exam hrs) = 123 - 3 = 120 hr (Time table hrs x 15 weeks)**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	−Lectures: Provide theoretical knowledge and foundational concepts. • Laboratories: hands-on training with educational videos. • Tutorials: Interactive problem-solving sessions and case studies. • Seminars: Discussions on recent developments in the field of economics • Exams: assess understanding and application of economics concepts.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation تقييم المادة الدراسية						
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #3,
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #5
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	2	10% (10)	6	LO #5, #8 and #10
Summative assessment	Midterm Exam	1hr	10% (10)	7	LO #1 - #5
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

The practical side الجانب العملي	
Indicative Contents المحتويات الإرشادية	**Week 1:** Introduction to economics Concepts of economics and the economic problem. **Week 2:** Subtitles - Types of economic analysis. **Week 3:** Law of demand and elasticities of demand. - Demand and supply curves/elasticities. **Week 4:** Consumer behavior theory - Imbalance due to changes in the factors determining both supply and demand together. - Utility theory/marginal utility/law of diminishing utility Consumer equilibrium **Week 5:** Equilibrium: the interaction of demand and supply.

	Week 6: Indifference curves: - Properties of indifference curves. - Applications of indifference curves. - Law of marginal utility. **Week 7:** Production theory: - Forms of production - Production functions - Isometric output curves/stages of production in the long-run function. **Week 8:** The variable factor of production (L) and the volume of production (Q) assuming that all other factors of production are constant. **Week 9:** Cost theory -Factors determining economic costs. **Week 10:** Elements of indirect costs of all kinds, whether production, marketing, or administrative, are included in the income statement as time expenses. -The relationship between average total costs and average variable costs. **Week 11:** Production and cost curves. **Week 12:** Market Economic concept. −Market functions. −Types of markets How markets work. −The invisible hand/forms of the market economy. **Week 13:** Types of markets: - Perfectly competitive market. −Complete monopoly/its causes and origins. **Week 14: National income and national product.**

	−Conceptual framework of national income and national product. **Week 1**5: −areas of globalization Pros and cons of globalization. **Total hrs = 200 = SSWL - (Exam hrs) = 123 - 3 = 120 hr (Time table hrs x 15 weeks)**

The practical side

<table>
<tr><th colspan="2">المنهاج الاسبوعي العملي</th></tr>
<tr><td></td><td>Material Covered</td></tr>
<tr><td>Week 1</td><td>Introduction to AI
Lab Activity: Overview of AI Tools and Environments</td></tr>
<tr><td>Week 2</td><td>Problem Solving and Search Algorithms
Lab Activity: Implementing Search Algorithms
Material Covered: Coding Breadth-First Search (BFS) and Depth-First Search (DFS) in Python.</td></tr>
<tr><td>Week 3</td><td>Knowledge Representation and Reasoning
Lab Activity: Logic Programming with Prolog
Material Covered: Basic Prolog programming for representing knowledge and solving logic puzzles.</td></tr>
<tr><td>Week 4</td><td>Machine Learning Basics
Lab Activity: Implementing Regression and Classification Models
Material Covered: Using scikit-learn to build simple regression and classification models.</td></tr>
<tr><td>Week 5</td><td>Decision Trees and Ensemble Methods
Lab Activity: Building and Evaluating Decision Trees
Material Covered: Using scikit-learn to create decision trees and understand pruning techniques.</td></tr>
<tr><td>Week 6</td><td>Neural Networks and Deep Learning
Lab Activity: Introduction to Neural Networks with TensorFlow/Keras
Material Covered: Building and training a simple neural network for a classification task.</td></tr>
<tr><td>Week 7</td><td>Natural Language Processing (NLP)
Lab Activity: Text Processing and Classification
Material Covered: Using NLTK and scikit-learn to preprocess text data and build a text classification model.</td></tr>
<tr><td>Week 8</td><td>Introduction to Fuzzy logic
Membership function with description of Mamdani , Sageno methods</td></tr>
<tr><td>Week 9</td><td>Fuzzy logic operators
And, Or , Not with examples</td></tr>
<tr><td>Week 10</td><td>Week 10: Fuzzy logic application
Some new applications and programming in matlab</td></tr>
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Week 11	**Fuzzy logic - programming in Matlab** • Some new applications and programming in matlab
Week 12	**AI in Healthcare and Finance** • Lab Activity: Predictive Analytics in Healthcare and Finance • Material Covered: Using machine learning models to predict outcomes in healthcare and financial datasets.
Week 13	**Current Trends and Future Directions in AI** • Material Covered: ○ Emerging AI technologies Future challenges and research directions
Week 14	**Review and Final Exam Preparation** • Lab Activity: Comprehensive Review and Q&A
Week 15	**Review and Final Exam Preparation** • Material Covered: Reviewing all lab activities, addressing questions, and preparing for the final exam.
Week 16	Final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
	. The book is based on the book "Principles of Economics" by Dr. Karim Mahdi Al-Hasnawi.	Yes

	2-Microeconomics book / Dr. Abdul Karim Jaber Shinjar 3- Principles of Economics / Dr. Kamel Allawi and Dr. Hassan Latif.	
Websites	https://www.youtube.com/watch?v=jcaNyjen6zM https://www.youtube.com/watch?v=fKPa753GIl4 https://www.youtube.com/watch?v=36L_GIcIlRo https://www.youtube.com/watch?v=j2ZFmm9Ki1E https://www.youtube.com/watch?v=TPYMKXXsV80	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C – Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.