

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Quantitative methods

Module Information				
معلومات المادة الدراسية				
Module Title	Quantitative methods		Module Delivery	
Module Type	S		☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	AT228			
ECTS Credits	3			
SWL (hr/sem)	75			
Module Level	2	Semester of Delivery		3
Administering Department	Accounting techniques	College	TCMM	
Module Leader	Ayad Abdulaziz Mahmood		e-mail	ayad_alhamdani@ntu.edu.iq
Module Leader's Acad. Title	Assistant lecturer	Module Leader's Qualification	Master	
Module Tutor	Ayad Abdulaziz Mahmood		e-mail	ayad_alhamdani@ntu.edu.iq
Peer Reviewer Name	Waleed Khalid	e-mail	Waleed_khalid@ntu.edu	
Scientific Committee Approval Date	1/10/2024	Version Number	1.0	

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Statistics principles	Semester	1
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	Introducing the term quantitative methods, which are a group of tools or methods that are used by the decision maker to solve a specific problem or to rationalize the administrative decision to be taken regarding a specific case. In addition to knowing the types of decisions, how they are made, and the theories related to them, as well as defining the concept and types. Mathematical models in quantitative methods.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	☐ Defining the concept of business organization. ☐ Definition of types of quantitative methods. ☐ Making decisions in different environmental situations. ☐ Using different theories and methods in making decisions. ☐ Defining mathematical models in quantitative methods.
Indicative Contents المحتويات الإرشادية	Week 1: Definition of the term business organization Week 2: How to make administrative decisions. Week 3: Make decisions with complete certainty Week 4: Types of decisions in risk situations. Week 5: What is meant by sensitivity of decisions? Week 6: How to make decisions when there is complete uncertainty Week 7: exam Week 8: What is meant by Bayes' theorem? Week 9: Introduction to the decision tree Week 10: Game theory concepts Week 11: Deriving mathematical relationships for game theory Week 12: Methods for solving game theory problems Week 13: What is meant by mathematical models? Week 14: How to formulate a mathematical model • . Week 15: Exam

	Total hrs = 200 = SSWL - (Exam hrs) = 123 - 3 = 120 hr (Time table hrs x 15 weeks)
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Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	• Lectures: Provide theoretical knowledge and foundational concepts. • Tutorials: Interactive problem-solving sessions and case studies. • Examinations: Assess understanding and application of QM concepts.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	3.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	27	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	75		

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)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	○ The concept of a business organization, the concept and types of quantitative methods, the role of quantitative methods in rationalizing decisions
Week 2	○ Administrative decision making: the process of making administrative decisions, types of decisions
Week 3	○ Making decisions under complete certainty: mathematical examples
Week 4	○ Making decisions in case of risk: the criterion of the expected financial value, the criterion of the expected value of complete information, the criterion of lost opportunity loss, mathematical examples.
Week 5	○ Sensitivity analysis of decisions in case of risk: mathematical examples
Week 6	○ Making decisions in a state of complete uncertainty: maximum maximum criterion, maximum minimum criterion, regret criterion, Laplace criterion, realism criterion, mathematical examples.
Week 7	○ Exam
Week 8	Bayes' Theorem: Mathematical examples
Week 9	Using a decision tree: mathematical examples
Week 10	Using game theory: game theory divisions, payout matrix construction
Week 11	Derivation of mathematical relationships for both the first player and the second player: mathematical examples
Week 12	○ Methods adopted in solving game theory problems: mathematical examples
Week 13	○ The concept and types of mathematical models
Week 14	○ Formulating mathematical models: preparing the data necessary to formulate the mathematical model, defining the goal, defining decision variables, determining the types of constraints and their mathematical signs.
Week 15	○ Exam
Week 16	week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Week 1	•
Week 2	•

Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	The book is entitled (Quantitative Methods in Management) by the author (Dr. Muayad Al-Fadl)	yes
Recommended Texts		
Websites		

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.				