

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Operations Research		Module Delivery
Module Type	Core		☒ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	UoB12345		
ECTS Credits	8		
SWL (hr/sem)	200		
Module Level	3	Semester of Delivery	2
Administering Department	Type Dept. Code	College	
Module Leader	Aseel Jasim	e-mail	
Module Leader's Acad. Title	Lecturer	Module Leader's Qualification	
Module Tutor		e-mail	E-mail
Peer Reviewer Name	Name	e-mail	E-mail
Scientific Committee Approval Date	01/06/2023	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	1. Modeling realistic problems with different mathematical formulas. 2. Finding a solution to any problem available in the labor market after modeling it using different methods of solution. 3. Searching for the best solution to the problem and searching for the best method used to deliver the product to the labor market.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Cognitive goals 2. Enable the student to identify problems in the labor market. 3. The student's ability to model realistic problems. Enabling the student to solve any problem he encounters in the labor market by converting it into a mathematical model and solving it in one of the solutions. Skill objectives for the course 1. Work as a member of a team to solve any problem in the market. 2. Understanding mathematics through practice

Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Part A – Linear Programming Constructing Linear Programming Models, Forms of Linear programming model, The formulation of linear programming Model, Method of solution of Linear programming Model. [8hrs] Part B - Method of solution of Linear programming Model Graphical method , Simplex Method. [8 hrs] Part C - Artificial Variable Technique, Duality in Linear Programming Two Phase Method, Duality and simplex method [9 hrs]
	Part D – Transportation Problems Method for Initial Basic Feasible Solution to a transportation problems, NorthWest Corner Rule, Least Cost Method, Vogel's Approximation Method, Testing initial basic feasible solution and obtain by it the optimal solution, Stepping Stone Method, Modified Distribution method. [10 hrs] Part E – Assignment Problems [6 hrs]

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	Providing distinguished educational and research services that keep pace with local and international quality standards in the fields of computer and informatics. These services allow preparing a distinguished, competitive graduate. In addition to that, the completion of high-end scientific research and effective participation in community service and building a knowledge-based economy.
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Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	102	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	98	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	6.5
Total SWL (h/sem)	200		
الحمل الدراسي الكلي للطالب خلال الفصل			

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 #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
	Midterm Exam	2hr	10% (10)	7	LO #1 - #7

Summative assessment	Final Exam	3hr	50% (50)	16	All
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Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction – Linear programming Models, Forms of Linear programming Models
Week 2	Application Examples , Graphical Methods for Solving Linear Programming Models
Week 3	Simplex Method
Week 4	Solving Linear Programming Problems by Simplex Method
Week 5	Artificial Variable Technique
Week 6	Duality in Linear Programming Problem
Week 7	Duality and Simplex Method
Week 8	Assignment 1
Week 9	Transportation Problems
Week 10	Initial Basic Feasible Solution of Transportation problems
Week 11	Optimal Solution of Linear Programming Problems
Week 12	Unbalanced Transportation Problem
Week 13	Assignment 2
Week 14	Assignment Problems

Week 15	The Hungarian Method for Assignment Problem
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	Makebest Decisions Through Operations Research, S.D.SHARMA	Yes
Recommended Texts	Prem Kumar Gupta, D.S. HIRA, S.CHAND بحوث العمليات ((مفهوما وتطبيقا) تأليف الدكتور حامد سعد نور الشمرتي	Yes
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.				