Course Description Template

(Approved based on the twinning agreement with the University of Karbala – Faculty of Business Administration / Department of Business Administration)

University Name: Warith Al-Anbiya University

College/Institute: College of Administration and Economics

Scientific Department: Department of Business Administration

Curriculum: Bologna Track for the Second Stage

MODULE DESCRIPTION FORM

Sample course description

Module Information Course Information					
Module Title	**Process Research Using QSB**			**Module Delivery**	
Module Type	**Basic**			☒ **Lecture** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**BA2204**				
ECTS Credits	**3**				
SWL (hr/sem)	**125**				
Module Level	UGx11 1		**Semester of Delivery**	1	
Administering Department			**College**		
Module Leader	Eng. Mohamed Hussein Radi		**e-mail**		
Module Leader's Acad. Title	Assistant Lecturer		**Module Leader's Qualification**		
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**	1.0	

Relation with other Modules Relationship with other subjects			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents Course Objectives, Learning Outcomes, and Instructional Contents	
Module Objectives **Course Objectives**	1- Developing students' skills in the field of modeling 2- Developing students' skills in identifying the components of the model 3- Develop students' skills in distinguishing between different techniques of operations research (e.g., linear programming, transfer, customization, network analysis, game theory, simulation) 4- Construct and formulate mathematical models of real-world management problems (e.g., maximizing profits or reducing costs) in the form of linear programming. 5- Use specialized tools and software such as QSB to effectively solve large and complex mathematical models 6- Use the quantitative results of models to propose wise management decisions that make the most of the organization's limited resources. 7- Motivating students to think logically: Developing the skills of systematic scientific thinking and quantitative analysis to face complex management challenges in a changing business environment.
Module Learning Outcomes **Learning Outcomes for the Course**	1. Understanding Methodology: Understanding the scientific method of operations research and its role as a quantitative analysis tool to support managerial decision-making in work environments. 2. Model Perception: Understand the basic characteristics and components of the types of mathematical models used, especially linear programming (LP) and transfer and assignment models. 3. Economic Outcome Interpretation: Understanding the economic significance and management interpretation of solution outcomes, including sensitivity analysis and dual variables. 4. Analytical Problem Solving: Develop the ability to think critically and logically to analyze complex data and determine the best course of action under constraints. 5. Communication and reporting: The ability to interpret and present the results of quantitative analysis (digital outputs) in a clear, concise, and meaningful manner for management and decision-makers. 6. Teamwork: Apply process research tools to team projects that simulate

	real business problems, fostering collaboration and task sharing. 7. Continuous Learning: Demonstrate the ability to use new computer tools and software in the field of decision-making and quantitative analysis.
Indicative Contents **How-to Contents**	The following main topics will be addressed in the current course The course aims to develop the student's analytical and applied competencies to be able to support the administrative decision with mathematical data and models, in accordance with the requirements of the Bologna track. The main themes of the course: **1. Linear Programming** o Focus on formulating mathematical models (objective function and constraint) and solving them graphically. o Learn sensitivity analysis to understand the impact of transactional changes on the optimal decision. **2. Customization and Transportation:** o Apply algorithms to find the optimal route to move goods or customize tasks at the lowest cost. **3. Project Management:** o Use CPM/PERT techniques to identify critical trajectory and manage project time. **4. Queue theory:** o Analyze customer/resource flow modeling to improve service levels and reduce waiting. **5. Proper Programming:** o Deal with problems that require solutions in integers ("yes/no" decisions). 6. Applied Focus • Tools: Training in the use of specialized software such as Solver in Excel. • Evaluation: It is centered on the student's ability to analyze the results of the models and provide practical and justified management recommendations through projects and case studies.

Learning and Teaching Strategies Learning and Teaching Strategies	
Strategies	The basic learning strategies are: 1- Lecture to students in the classroom 2- Use of the school whiteboard. 3- Ask questions to students and ask them to solve them. 4- Participation of students in solving problems in the classroom. 5- Assigning students to homework. 6- Assigning students to make reports related to solving specific administrative problems.

Student Workload (SWL) The student's academic load is calculated for 15 weeks			
Structured SWL (h/sem) **Student's regular academic load during the semester**	48	**Structured SWL (h/w)** **Regular Academic Load of the Student Weekly**	3.1
Unstructured SWL (h/sem) **Student's irregular academic load during class**	77	**Unstructured SWL (h/w)** **Student's irregular academic load per week**	5.1
Total SWL (h/sem) **The student's total academic load during the semester**	**125**		

As

Module Evaluation Assessment of the course					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	Quizzes	2	10% (10)	8,11	All
	Assignments	2	10% (10)	8, 12	All
	Discussions	1	10% (10)	All	All

	Report	2	10% (10)	7,14	All
Summative assessment	Midterm Exam	1hr	10% (10)	10	All
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

Theoretical Weekly Curriculum

Week	Material Covered
Week 1	Fundamentals of Linear Programming (LP)
Week 2	Graphical Method
Week 3	Special Cases in LP
Week 4	Sensitivity Analysis - I
Week 5	Sensitivity Analysis (II)
Week 6	Computer Applications for LP
Week 7	Transportation Problem
Week 8	Graphical Method
Week 9	Assignment Problem
Week 10	Exam
Week 11	PERT Technology
Week 12	Queuing Theory - I
Week 13	Queuing Theory (II Queuing)
Week 14	Integer Programming
Week 15	Advanced Review & Applications
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

Weekly Laboratory Curriculum

Week	Material Covered
Week 1	Introduction to Modeling and Graphical Solution (LP)

Week 2	Application of Linear Programming and Solving Complex Models
Week 3	Sensitivity Analysis and Interpretation of Results (LP)
Week 4	Transportation & Assignment
Week 5	Project and Critical Path Management (CPM/PERT)
Week 6	Correct programming and queue theory
Week 7	Integrated Practical Project and Discussion (Case Study)

Learning and Teaching Resources

Learning and Teaching Resources

	Text	**Available in the Library?**
Required Texts	Applications and Analytics of Win QSB Business Quantum System	No. Provided by the professor
Recommended Texts	None	
Websites	There isn't any	

Grading Scheme

Grading Chart

Group	**Grade**	**Recognition**	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	**Privilege**	90 - 100	Outstanding Performance
	B - Very Good	**Very good**	80 - 89	Above average with some errors
	C - Good	**Good**	70 - 79	Sound work with notable errors
	D - Satisfactory	**Medium**	60 - 69	Fair but with major shortcomings
	E - Sufficient	**Acceptable**	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	**Deposit (in processing)**	(45-49)	More work required but credit awarded
	F – Fail	**Failure**	(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.