Course Description Form

1. Course Name:
Operation Research
2. Course Code:
MS302
3. Semester / Year:
First 2024- 2025
4. Description Preparation Date:
30/ 3/2024
5. Available Attendance Forms:
Theory
6. Number of Credit Hours (Total) / Number of Units (Total)
60hrs 4 units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Thekra Ibraheem Latif Email: thekra.i.latif@edu.tu.iq
8. Course Objectives

Course Objectives	1. Building a mathematical model. 2. Solve problems with two variables. 3. Touche on the types of solution of the mathematical model. 4. Solve a problem with more than two variables. 5. Description of inert and artificial variables. 6. Solve a problem using the simplex method. 7. Solve problems using M-Big method. 8. Sensitive analysis of the mathematical model. 9. corresponding form. 10. Solve models using inverses. 11. Solve problems using the sensitive analysis method. 12. Linear programming applications.

9. Teaching and Learning Strategies	
Strategy	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	Definition & examples	Introduction, Theoretical models for linear programming problems.	course	Examinations: daily & monthly
2	4	Definition & examples	Numerical procedures for soling linear programming problems, Graphical method.	course	Examinations: daily & monthly
3	4	Definition & examples	Basic and Basic feasible solution.	course	Examinations: daily & monthly
4	4	Definition & examples	Simplex method (slack variables).	course	Examinations: daily & monthly
5	4	Definition & examples	Simplex method (artificial variables).	course	Examinations: daily & monthly
6	4	Definition & examples	Simplex multipliers method.	course	Examinations: daily & monthly
7	4	Definition & examples	Introduction Dual method and Dual theorem.	course	Examinations: daily & monthly
8	4	Definition & examples	The relationship between the two models solution and what results from them, The inverse basis method.	course	Examinations: daily & monthly
9	4	Definition & examples	Sensitivity analysis method , Changes in the right side of the constraints , Changes in objective function coefficients.	course	Examinations: daily & monthly
10	4	Definition & examples	Introduction, Find a primary solution , West corner method , Least cost method.	course	Examinations: daily & monthly
11	4	Definition & examples	Vogle's method, Unbalanced transport problems.	course	Examinations: daily & monthly
12	4	Definition & examples	The total of the sources contains the greatest goals you need, The total of the sources is less than what the ends need.	course	Examinations: daily & monthly
13	4	Definition & examples	Find the optimal solution to the transport problem.	course	Examinations: daily &

					monthly
14	4	Definition & examples	Examples of the optimal solution	course	Examinations: daily & monthly
15	4	Definition & examples	Preparatory week before the final Exam	course	Examinations: daily & monthly