Academic Program Description Form

University Name: Tikrit

Faculty/Institute: Science and mathematic

Scientific Department: Computer Science

Academic or Professional Program Name: Operations Research

Final Certificate Name: Bachelor of Computer Science
Academic System: courses

Description Preparation Date:

File Completion Date: **1/4/2024**

Signature:	**Signature:**
Head of Department Name:	**Scientific Associate Name:**
Mohammed Akthim Ahmed	**Mashary Askar**
Date:	**Date:**

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

Approval of the Dean

1. Program Vision
This academic program description provides a necessary summary of the most important characteristics of the program and the learning outcomes that the student is expected to achieve, demonstrating whether he or she has made the most of the available opportunities. It is accompanied by a description of each course within the program
2. Program Mission
3. Program Objectives: The academic program in the Computer Science Department aims to:
✓ Building the student scientifically and qualifying him to work in the field of computer science.   ✓ Give a general idea about the material   ✓ How to build linear models   ✓ How to process or convert forms from one format to another   ✓ Solve models in different ways to reach the optimal solution   ✓ Discover some special cases of the solution   ✓ Solution sensitivity analysis   ✓ Solve transportation and optimal allocation problems   ✓ Addressing decision-making processes
4. Program Accreditation
A1- Gaining experience and knowledge in the basics of scientific research.
A2- How to build linear models and solve problems.
A3- Solve linear models in more than one way.
A4- Knowing the most important methods of the decision-making process.
B - The skills objectives of the course
How to make decisions in any field requires resorting to scientific methods to reach the desired goals in light of the available capabilities. That is, the operations

research subject uses quantitative methods to help in making optimal decisions.

5. Other external influences

- ✓ Traditional lectures and discussion style
- ✓ Laboratory activities and preparing reports
- ✓ Advanced lectures (presentation)

Courses structure

Week	Hours	Required Learning	Unit or subject name	Learning method	Evaluation method
1	4	Introducing the student to what operations research is	Introduction to operations research	Traditional lectures, discussion style, and presentation	Discussion and tests
2	4	The student learns what linear programming is	Linear programming	Traditional lectures, discussion style, and presentation	Discussion and tests
3	4	The student learns to use the graph to solve linear programming	Solve the linear programming model using the graphical solution method	Traditional lectures, discussion style, and presentation	Discussion and tests
4	4	Introduction to binary programming	e corresponding model or binary programming	Traditional lectures, discussion style, and presentation	Discussion and tests
5	4	The student learns to solve binary programming models	Solve binary programming	Traditional lectures, discussion style, and presentation	Discussion and tests
6	4	Definition of the transportation problem	The transportation problem	Traditional lectures, discussion style, and presentation	Discussion and tests
7	4	Solve the transportation problem using the lowest cost method	Lowest cost method	Traditional lectures, discussion style, and presentation	Discussion and tests
8	4	Solve the transportation problem using the	The Northwest method	Traditional lectures, discussion style, and presentation	Discussion and tests

		Northwestern method			
9	4	Solving the transportation problem using Vogel's method	Vogel's method	Traditional lectures, discussion style, and presentation	Discussion and tests
10	4	Finding the optimal solution to the transportation problem	the winding path method	Traditional lectures, discussion style, and presentation	Discussion and tests
11	4	Finding the optimal solution to the transportation problem	the modified distribution method	Traditional lectures, discussion style, and presentation	Discussion and tests
12	4	Solving the allocation problem	different combinations (full count)	Traditional lectures, discussion style, and presentation	Discussion and tests
13	4	Solving the allocation problem	the Hungarian method	Traditional lectures, discussion style, and presentation	Discussion and tests
14	4	Definition of decision-making methods	decision-making methods	Traditional lectures, discussion style, and presentation	Discussion and tests

13. Course development plan

Plans are made to develop the students' personalities by holding discussion sessions with them and asking them to submit weekly reports

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15. The most important sources of information about the program

College website.

The department's website and email.

16. Infrastructure	
A- Required textbooks:	
B- Main references (sources)	• Lectures presented by the subject teacher • Books available in the college library
C- Recommended books and references (scientific journals, reports,...)	Lectures and applications in operations research
D- Electronic references, Internet sites	Any other materials available on the web.