Department of … *Accounting*

University of …Cihan University

Subject: Operation Research

Course Book – Year 2,

Lecturer's name –Prof.Dr. Obaid Mahmmood Mohsin

Academic Year: 2023/2024

Course Book

1. Course name	**Operation Research**
2. Lecturer in charge	Prof.Dr.Obaid Mahmood Mohsin
3. Department/ College	Accounting
4. Contact	e-mail:obed.muhsin@sulicihan.edu.krd Tel:
5. Time (in hours) per week	3 hours per week
6. Office hours	3 hours morning
7. Course code	ACC32208
8. Teacher's academic profile	e.g Webpage, Blog, Moodle… or few paragraphs about not less than 100 words
9. Keywords	

10- Description

Concepts covered in this course Network Analysis, Critical Path Method (C.P.M.) (PERT) Computations,   Decision Theory, Decision Tree, Game Theory, Inventory Models.

11- Objective

The main objective of this course is to give student a good theoretical and practical knowledge of operations methods. The student will take courses from a variety of technique that focus extensively on statistical methodology, mathematical modeling, and computer implementation issues.

The student will be able to solve and interpret correctly the solutions of a problems and recognize the situations where OR techniques can be used as decision making tools and to interpret correctly the conclusions which can be derived using these techniques.
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12-Learning Outcomes

At the end of this course the student will:-

1. understand and be able to construct CPM/PERT techniques to a set of activities.
2. learn how to deal with the problems arising due decision making under certainty , under uncertainty and under risk.
3. learn how to deal with the game theory.
4. understand and be able to deal with the inventory models.

Teaching and Learning Strategy

Contact hours: 2 theoretical weekly hours + Assignments

13- Assessment Method

The 100 marks will be divided into
The midterm examination	30%
Activities	10%
Final examination	60%

14-Text Books and References

1. **Text books:**

   Hamdy, A.Taha; Operations Research an Introduction, 8th Edition, Pearson Education Inc., 2007.

2. **Reference books:**

   Gupta, P. K. & D. S. Hira; Operations Research, 2nd Edition,S. Chand & Company (Pvt) Ltd, Ram Nagar, New Delhi, 1987.

15- The Syllabus

Chapter 1: Basics of Operations Research :-

#Introduction----#-Some Definitions of Operations Research

 #-How Operations Research works---#--Some Technique of Operations Research

CH-2-Transportation Problem

1-Introduction   --2-Transportation Method

3-Methods for finding Initial Solution—4- North-west Corner Method (NWCM)

5- Least Cost Method (LCM)---6- Vogel's Approximation Method (VAM)

7- Test for Optimality Method (MODI)   8-Examples 9-Problems

 CH-3 – Assignment Problem

1-Introduction---2- The Hungarian Method ----3- Examples   ---4- Problems

Chapter 4: Network Analysis:-

#1-Definitions , Activity, Event, Path, Dummy.#2-Arrow (network) Diagram Representation

3-Critical Path Method (C.P.M.)-

4-Network Analysis, CPM Computations.

5-Critical Path Method (C.P.M.) 6-Critical Path Calculations.

7-Program's Evaluation and Review Technique -(PERT) Computations.

8-PERT Computations---9-Cost Consideration in Project Scheduling

10-Determination of the Floats---11-Practice problem .

   CH-5—Decision Theory

1-Introduction --2- Basic Definitions----3- Decision Making Under Certainty

4- Decision Making Under Uncertainty---5- Decision Making Under Risk

6- Decision Trees---7- Examples----8-Problem

18. Practical Topics (If there is any)
19. Examinations: -Define -calculate   -Explain   -Test-Find-construct
20. Extra notes: Here the lecturer shall write any note or comment that is not covered in this template and he/she wishes to enrich the course book with his/her valuable remarks.
21. Peer review   This course book has to be reviewed and signed by a peer. The peer approves the contents of your course book by writing few sentences in this section.   *(A peer is person who has enough knowledge about the subject you are teaching, he/she has to be a professor, assistant professor a lecturer or an expert in the field of your subject).*

      Main Lecturer in charge   **Head of The Department**