



Department of Water Resource Engineering

College of Engineering

University of Salahaddin

Subject: 6130 Water Resources Management

Lecturer: Ass. Prof. Dr. Jehan M. Sheikh Suleimany

@asst .lect.Binahi Mohammad Amin Said Ali

Bologna System Academic Year 2021/2022

Course Book

1. Course name	Water resources management
2. Lecturer in charge	Ass. Prof. Dr.Jehan Sheikh Suleimany
3. Department/ College	Water Resource engineering department/college of engineering
4. Contact	e-mail: jeahan_fattah@yahoo.com , jehanmohammed.sheikhsuleimany@us.edu.krd binahimuhamad@yahoo.com Tel: 07513042595
5. Time (in hours) per week	For example Theory: 3 Practical:
6. Office hours	2 hours/week
7. Course code	6130
8. Teacher's academic profile	More than 25 years' experience in teaching different subjects
9. Keywords	Linear programing ,graphical method, non linear programig
10. Course overview: <ul style="list-style-type: none"> • Water Resources Systems; Systems Analysis Techniques; Optimization. • Conditions of LP Problem; Graphical Method; Simplex Method; dual method • Introduction; Transportation Algorithm; Northwest-corner Method; Least-cost Method; Vogel Approximation Method; Balancing the Transportation Model; • Introduction; NLP without Constraints; NLP with Equality Constraints; NLP with Equality and Non-equality Constraints; LaGrange multiplier, Mbig method 	
11. Course objective: <p>On successful completion of this course, students will be able to:</p> <ol style="list-style-type: none"> 1. Apply mathematical approaches for managing water resources systems. 2. Understand integrated planning of water resources projects. 3. Solve engineering problems in operations research using LP, and NLP. 4. Use computer software to solve optimization problems. 	
12. Student's obligation <p>Students should perform one midterm exams and one final exam and to submit group work assignments represented by a report on design of a barrage completely, conducting short quizzes and they should attend the classes regularly</p>	
13. Forms of teaching <p>The teaching material will be handover to the students as a hard and soft copy in advance. Then, the classes will be delivered as PowerPoint presentation and examples will be illustrated in class.</p>	
14. Assessment scheme <p>Course works (groups) ,exams, quizzes, assignments 40/40 Final Exam 60/100</p>	

15. Student learning outcome:

Upon successful completion of this course, the student will be able to

This course enables students to achieve, by the time of graduation:

- An ability to apply knowledge of mathematics, science, and engineering.
- An ability to identify, formulate, and solve engineering problems.
- The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

16. Course Reading List and References:

Water Resources Systems and Management, 2008, by B. L. Gupta and Amit Gupta, 2nd editions standard publishers' distributors, Delhi.

Linear Programming and network flows, 2010, by Mokhtar, S. Bazaraa, 3rd edition, John Wiley& Sons, Inc.

Linear and non-linear programming, 2008, by Yinyu Ye, Springer.

17. The Topics:

Lecturer's name

- 1- Linear programming by graphical method and simplex method with applications.
- 2- Nonstandard linear programming Dual method
- 3- Non linear programming with applications
- 4-

Lecturer's name
Jehan
SheikhSuleimany
@asst lect.binahi
mohammad amin said
ali

18. Practical Topics (If there is any)

Server and mat lab programs

19. Examinations:

1-Solve the nonlinear programming problem using lagrange multiplier method

2- solve standard maximization problem using simplex method

3-solve non standard minimization leaner programming using dual method

20. Extra notes:

21. Peer review

پیداچونہوہی ھاوہل

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.

