

Yıldız Technical University
END 3991 Operations Research 2
FALL 2022 Information Sheet
(This sheet must be attached to your course file.)

Lecturer Information:

Vildan Ç. ÖZKIR
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Office Hours: MONDAY 13:00-15:00

Prerequisite: END 2972 Operations Research 1 (Review your END2972 lecture notes.)

Course Objectives:

- To teach formulating network optimization models.
- To teach appropriate methods for solving network problems.
- To give insight on inventory planning and queuing models.

Course Content:

Introduction to Network Models, Minimum Spanning Tree Problems, Maximum Flow Problems, Shortest Path Problems, Minimum Cost Flow Problem, Network Simplex Method, Project Management with PERT/CPM, Dynamic Programming Problems, Inventory Theory: Deterministic Inventory Models, Deterministic - Dynamic EOQ Models and Applications, Stochastic EOQ Models and Applications, Queuing Theory, Queuing Models

Required Reading:

- Taha, H. A. (2010, 2022), Operations Research: An Introduction, Pearson.
- Winston, W. L. (2004). Operations research: applications and algorithms. Brooks/Cole.
- Hillier, F.S. & Lieberman, G.J., (2021), Introduction to Operations Research, McGraw Hill.

Expectations:

- %70 Attendance is required.
- At the end of specified lectures (Week 5 and Week 13), quiz assignments will be given. There will be no make-up for quizzes. The best grade will be taken.
- Please use a flat file for this course and bring it to class during semester. Take your notes using only pen. You can only use pencils for your drawings.
- It is recommended that you do not miss any examination. A make-up will only be offered to those with a medical report. The make-up will be given on the last week of the semester and will cover the entire course material.

Important Dates & Grading

Assignments	Dates	Grading
Midterm	(8 th week) November 21-26,2022	% 40
Quizzes	(5 th week) October 31,2022 09.00 (13 th week) December 26,2022 09.00	% 15
Course File	(15 th week) Final Exam	% 5
Final	(15 th week) January 9-19, 2023	% 40

Week Subjects:

1. Introduction Network Models
2. Minimum Spanning Tree Problem and Applications
3. Maximum Flow Problem and Applications
4. Shortest Path Problem and Applications
5. Minimum Cost Flow Problem and Network Simplex Method
6. Project Management with PERT/CPM
7. Dynamic Programming
8. MIDTERM
9. Introduction to Inventory Management
10. Deterministic- Static Inventory Models
11. Deterministic- Dynamic EOQ Models and Applications
12. Stochastic EOQ Models and Applications
13. Queuing Theory and Queuing Models
14. Queuing Theory and Queuing Models
15. Final Exam