

MIDDLE EAST TECHNICAL UNIVERSITY
DEPARTMENT OF INDUSTRIAL ENGINEERING

IE 421 Inventory Planning Problems
Spring 2022

Instructor: İsmail Serdar Bakal (isbakal@metu.edu.tr)

Schedule: To be announced

On the web: metuclass.metu.edu.tr

Catalog Description: Definitions. Deterministic inventory problems. Deterministic inventory problems with constraints. Unconstrained, infinite horizon, stochastic demand continuous review problems. Single period, stochastic demand problems. (s,S) policies for periodic review, infinite horizon problems.

Prerequisite: IE323

Topics to be covered:

- Introduction to Basic Concepts
- Economic Order Quantity and Extensions
- Stochastic Inventory Problems
 - Single Period
 - Periodic Review
 - Continuous Review
- Coordinated Replenishments at a Single Stocking Point
- Multi-echelon Inventory Systems

References:

- Silver, E. A., Pyke, D. F., and Thomas, D.J., Inventory and Production Management in Supply Chains, 4th edition, CRC Press, 2017.
- Nahmias, S., and Olsen, T. L. Production and Operations Analysis, 7th edition, Waveland Press, 2015.
- Axsäter, S., Inventory Control, Kluwer's International Series, 2000.
- Zipkin, P., Foundations of Inventory Management, McGraw-Hill, Irwin, 2000.

Grading (Tentative)

Assignments/Quizzes/In-class Exercises	30 %
Midterm(s)	40 %
Final Exam	30 %

Make-up Policy

A single make-up examination will be given after the final exams.

Academic Integrity

Every member of the METU community adopts the following honor code as one of the core principles of academic life and strives to develop an academic environment where continuous adherence to this code is promoted.

"The members of the METU community are reliable, responsible, and honorable people who embrace only the success and recognition they deserve, and act with integrity in their use, evaluation, and presentation of facts, data, and documents."

Notes

- Students are responsible for checking the course website on METU-CLASS regularly.
- If you miss an exam, you need to provide an official excuse to be eligible for the make-up exam. There will be a single, comprehensive make-up exam after the final-exam period.
- You are expected to attend all lectures.