

ISE 532/432
Inventory and Manufacturing Control I

Winter 2005

Credit Hours: 4/4, **Prereq:** None/ISE305, **Call Number:** 04001/03983

Description:

Classification of Production Systems, Discussion of Demand Characteristics, Forecasting. Applications of Mathematical Modeling for Production Planning and Master Production Scheduling. Review of Basic Inventory Models. Introduction to Just-in-Time, Materials Requirements Planning, Capacity Planning and Scheduling.

Sessions:

TTh 1:10pm-3:00pm, Stocker Center 106

Instructor:

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Office Hours:

MW 2:00-3:00pm, TTh 3:30pm-4:30pm or by appointment

Textbook:

Elsayed A. Elsayed and Thomas O. Boucher, Analysis and Control of Production Systems, Prentice Hall, 1994.

Reference Books:

Thomas E. Vollmann, William Berry, and Clay Whybark, Manufacturing Planning and Control Systems, Irwin/McGraw Hill, 1997.

Ronald G. Askin and Jeffrey B. Goldberg, Design and Analysis of Lean Production Systems, John Wiley, 2002.

Course Objective:

To prepare students to analyze and design inventory and production planning systems by using various available techniques. To discuss major activities involved and their interrelations in a manufacturing system setting. To provide an understanding of the available tools and when to use them.

After the course, students will be able to apply the approaches discussed and the tools used to design inventory and production planning systems.

Computer Usage:

Students can use spreadsheet (Excel, 1-2-3 Lotus, etc.) to solve homework problems. Software is available in Ohio University and ENT computer labs (Stocker rooms 127, 264, 267, 305, 308, 414). If you don't have an account, please see the lab administrator in room 264A. Mathematical Programming Software will be available in the IMSE Computer Lab 292 .

Homeworks:

Homework problems will be assigned every Thursday and they will be due Tuesday of the following week.

Project:

A project involving some of Forecasting, Aggregate Planning, Inventory Concepts, Materials Planning, Capacity Planning, Detailed Scheduling, and Kanbans will be assigned. The emphasis will be on developing approaches that integrate various functions in a manufacturing system. Project groups will consist of 2-3 members. There will be a project presentation during the quarter.

Exams:

Two midterm exams will be given. Exams will be announced at least one week in advance. Students must take the exams on the date and the time scheduled. Exceptions can only be made if the student submits a written request before the exam with valid reasons and if it is approved by the instructor. A bonus question can also be asked in some exams. Final exam is comprehensive.

Quizzes:

There will be unannounced quizzes. It will include the material covered in the previous week (unless otherwise stated).

Readings:

You are recommended to read the material to be covered before the class.

Grading:

Midterm I	20% (Tentatively scheduled for October 7)
Midterm II	20% (Tentatively scheduled for November 4)
Final Exam	25%
Homework	10%
Quizzes	10%
Project	15%

Attendance Policy:

Attendance to all sessions is strongly recommended. Students are responsible for all of the material covered in the class.

Academic Misconduct:

No collaboration of any kind is permitted during any of the examinations, homework, or quizzes. All suspected cases will be treated according to the University Policy as stated in the Catalog and the Student Handbook.

Tentative Schedule:

1. January 3-7 Introduction, Chp 1, Notes
Forecasting, Chp 2
2. January 10-14 Forecasting, Chp 2
Inventory Control, Chp 3
3. January 17-21 Inventory Control, Chp 3
4. January 24-28 Inventory Control, Chp 3
Aggregate Production Planning, Chp 4
5. Jan 31-Feb 4 Aggregate Production Planning, Chp 4
EXAM I
6. February 7-11 Materials Requirements Planning, Chp 5
7. February 14-18 Capacity Planning, Notes
JIT/Lean Manufacturing, Chp 8
8. February 21-25 JIT/Lean Manufacturing, Chp 8
Scheduling, Chp 7
8. Feb. 28-March 4 Scheduling, Chp 7, **EXAM II**
9. March 7-11 Scheduling, Chp 7, Project Presentations

Final Exam is scheduled on Tuesday March 16, at 2:30 pm in the same classroom.