Department of Industrial and Information Management-Graduate Program

R352800 Inventory Systems
(存貨系統)
Fall 2011 (99 學年度第 2 學期)

This mission of Department of Industrial and Information Management is to cultivate industrial and information management professionals who possess TIP (Technological knowledge, Innovative foundation, and Perceptive learning).

General Program Learning Goals (goals covered by this course are indicated):

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<td>✓</td>
<td>1. Graduates should be able to communicate effectively verbally and in writing.</td>
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<td>2. Graduates should solve strategic problems with a creative and innovative approach.</td>
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<td>3. Graduates should demonstrate leadership skills demanded of a person in authority.</td>
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<td>4. Graduates should possess a global economic and management perspective.</td>
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<td>5. Graduates should possess the necessary skills and values demanded of a true professional.</td>
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Instructor:
Shine-Der Lee, Ph.D., Professor
Office; IIM building: #61318, Phone: # 53146
sdlee@mail.ncku.edu.tw
Class hours: Tuesday 8:10-9:00AM, Thursday 10:10-12:00AM
Office hours: Tuesday 3:00-5:00PM, Thursday 3:00-5:00AM, or by appointment

Course Description:
The focus of this course will be on the analytical aspects of inventory models and the computational approaches to solve these inventory problems. It is an extension of the Operations management course at the undergraduate level. The modeling tools, which solve or analyze real-complex inventory problems will be stressed and formalized. This is a lecture-based course that emphasizes on the scientific and mathematical techniques for solving inventory management related problems. Various handouts are distributed throughout this course.

Course Objectives:
The primary goals of this course are:
- To demonstrate the analytical modelling process in inventory theory, including problem formulation, model building, solution procedures, analysis, and implementation.
- To introduce various modeling techniques for solving a variety of inventory and operations management problems.
- To establish a solid mathematical foundation for advanced study in the production, inventory, and supply chain management fields.

Content Summary:
Topics included but not limited to:

- Administration and introduction (Chapters 1 & 2) (1 week)
- Definitions and general concepts (3) (1 week)
- Basic EOQ model and extensions (5) (2 weeks)
- Lot sizing models with dynamic demand (6) (1 week)
- Markov chain and dynamic (s, S) inventory models (2 weeks)
- Single item-probabilistic demand (s, Q) model (7) (2 weeks)
- Inventory control of class A & C item (8+9) (2 weeks)
- Inventory control of seasonal items (2 weeks)
- Items on sale with temporary price discount (1 week)
- Coordinated replenishment models (11) (1 week)
- Multi-echelon inventory systems (12) (1 week)
- Production inventory systems (12) (1 week)

Prerequisite:

- Fundamental knowledge in linear algebra and operations management is recommended.

Textbooks:


Recommended references:

- Johnson, L., and Montgomery, D., Operations research in production planning, scheduling, and inventory control, John-Wiley and Sons, 1974

Course Requirement:

- Class rules will be strictly enforced, turn off your pagers, cellular phones, and electronic devices.
- Homework will be assigned every week. It is due in the first meeting of the coming week. Submit your homework with letter or A4 size papers. No late or sloppy homework will be accepted.
- A special problem (A scaled-up version of assignment) is given to each student during the last quarter of the semester. This is designed for the students to independently practice the inventory modeling process learned in the class. A complete written report with oral discussion is due in the final week.
- No make-up Exam
**Grading Policy:**

- Homework 30%
- Mid-term Exam 30%
- Final Exam 30%
- Special problem 10%

**Grading Policy/評量方式:**

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<th>HW 30%</th>
<th>Midterms 30%</th>
<th>Project 10%</th>
<th>Final 30%</th>
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