Operations Management I

Course Outline

- Instructor/Assistant
- Course Description
- Texts/Grading
- Schedule

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Course Outline

Instructor

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Assistant

Course Outline

Operations Management 2
- Project Management
- System Design (Layout and Location)
- Factory Physics

Course Description

Operations management (OM) is the management of an organization's productive resources or its production system, i.e. design and operation of manufacturing and service systems. The overall topics of the first semester (OM1) are: basics of OM, strategic issues and various operational problems in manufacturing and service systems. The detailed topics are as follows.

- Operations Management – Basics
  - ✓ Definition
  - ✓ Basic objectives
  - ✓ Decisions
- Strategic management (기업의 경영전략 및 생산전략)
  - ✓ Hierarchical structure
  - ✓ Manufacturing strategy
- Process design strategy (공정설계 전략)
  - ✓ Major decisions
  - ✓ Strategic fit
- Demand forecasting (수요예측)
  - ✓ Laws of forecasting
  - ✓ Methods
  - ✓ Measure and control of forecast errors

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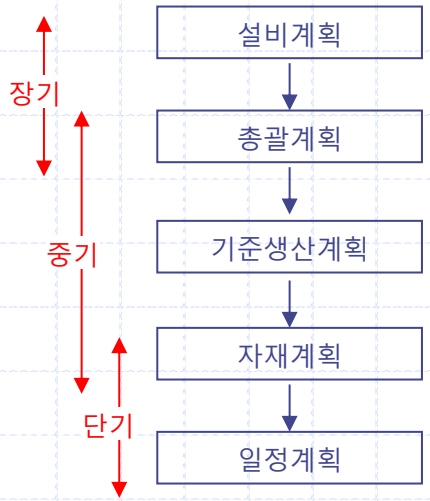
- Production planning and scheduling
  - ✓ Aggregate production planning (총괄계획)
    - ➢ Introduction
    - ➢ Inputs and Objectives, Alternatives, and Planning Strategies
    - ➢ Planning Process
    - ➢ Approaches
  - ✓ Material requirement planning (MRP)
    - ➢ Overview
    - ➢ Inputs, Outputs, and Procedure
    - ➢ Special Topics
    - ➢ Problems
  - ✓ Manufacturing resource planning (MRP II)
    - ➢ Long-Range Planning
    - ➢ Intermediate Planning
    - ➢ Short-Range Planning
  - ✓ Scheduling
    - ➢ Introduction
    - ➢ Performance Measures
    - ➢ Workforce Scheduling
    - ➢ Operations Scheduling



Course Outline

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- Toyota Production System (Just-in-Time or Lean Manufacturing)
  - Overview
  - Implementation: production quantity control and quality assurance
  - Lessons
- Inventory Models
  - Introduction
  - Economic order quantity (EOQ) model and extensions
  - Dynamic lot-sizing
  - Stochastic inventory models
    - Continuous review models
    - Periodic review model

Course Outline

Texts

- Hopp, W. J. and Spearman, M. L., 2008, **Factory Physics**, McGraw Hill. .
  (번역서: 강현곤, 김선민, 노형봉, 문일경, 2005, 제조과학의 법칙, 한경사)
- References
  - ✓ Krajewski, L. J. and Ritzman, L. P., 2005, **Operations Management: Processes and Value Chains,** Prentice Hall .
  - ✓ Gaither, N. and Frazier, G., 2002, **Operations Management**, South-Western.
  - ✓ 한국과학기술원 생산경영연구실, 2000, **생산관리: 전략과 분석**, 석정

Grading

- Midterm Examination: 30%
- Final Examination: 40%
- Homework: 25% (Copy: 0 points)
- Class participation: 5% (Late: - 5 points, Absence: - 10 points (total 50 points))

Course Outline

- **Schedule**

Week 01	① Introduction ② OM – Basics	HW #1	**Week 09**	① MRP – Basics ② MRP – Algorithm	HW #4
Week 02	① Strategic Management ② Manufacturing Strategy		**Week 10**	① MRP II – Overview and Hierarchy ② Toyota Production System	HW #5
Week 03	① Process Design Strategy (1) ② Process Design Strategy (2)		**Week 11**	① Scheduling – Introduction ② Scheduling – Methods (1)	
Week 04	① Forecasting – Introduction ② Forecasting – Methods (1)		**Week 12**	① Scheduling – Methods (2) ② Scheduling – Methods (3)	
Week 05	① Forecasting – Methods (2) ② Forecasting – Methods (3)	HW #2 Term#1	**Week 13**	① Inventory – Introduction ② Inventory – EOQ/extensions (1)	
Week 06	① Aggregate planning – Introduction ② Aggregate planning – Models (1)		**Week 14**	① Inventory – EOQ/extensions (2) ② Inventory – DLS	HW #6
Week 07	① Aggregate planning – Models (2) ② Aggregate planning – Models (3)	HW #3	**Week 15**	① Inventory – Stochastic Models (1) ② Inventory – Stochastic Models (2)	HW #7
Week 08	**Midterm Examination**		**Week 16**	**Final Examination**	

Course Outline

Any questions or suggestions?