

IE 524

Planning of Production System

Spring 2009

Instructor: Ali Tamer Ünal, M 4115

Objectives:

Overview of production systems and planning paradigms. Hierarchical planning, aggregation/disaggregation. Continuous and discrete lot-sizing models and solution methods. Distributed planning and coordination in supply chains.

References:

- Hax A.C. and Candea C. 1984.** *Production and Inventory Management*. Prentice-Hall.
Vollmann, T. E., Berry, W. L., Whybark, D. C., and Jacobs, F. B. 2005. 5th Edition.
Manufacturing Planning and Control for Supply Chain Management. McGraw Hill.
Pochet Y. and Wolsey L. A. 2006. *Production Planning by Mixed Integer Programming*.
Springer.
Schneeweiss C. 1999. *Hierarchies in Distributed Decision Making*. Springer.

Outline:

- Introduction to production planning systems
- Aggregate production planning
 - Linear uncapacitated / capacitated lot sizing models
 - Formulations
 - MIP solution procedures
 - Heuristics
 - Quadratic models
- Hierarchical production planning systems
 - Constructional
 - Organizational
- Distributed planning and coordination in supply chains

Grading:

Homeworks	20%
Midterm	20%
Term Project 1	20%
<i>Term project 1 includes an extensive literature survey and/or original research work (theoretical or computational) on a specific planning problem. Each student is asked to submit a written report and make a class presentation.</i>	
Term Project 2	20%
<i>Term project 2 includes analysis of a real planning problem in a manufacturing company. Each student is asked to submit a written report in which he/she formulates the particular planning problem and suggests possible solution procedures.</i>	
Final	20%