IE 524
Planning of Production Systems

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 / Quizes / Contribution	20%
Midterm	25%
Term Project	20%

Term project 1includes 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.

Final	35%