IE 312
FACILITIES DESIGN AND PLANNING

Spring 2009

INSTRUCTOR : Dr. Ümit Bilge (M4025)

SCHEDULE : Tue 4, 5 (2230) / Th 3, 4 (2200) / F 4 (M3100)

OBJECTIVES :
As the first of a two-course series in Production Planning, this course is organized to introduce the students to modeling and analysis of production systems. After providing an understanding of the nature and context of production systems and the key decision areas at the various stages in a systems life cycle, the focus will be set on the strategic, long-range issues particularly related to the design phase. A wide range of design issues encountered in modern manufacturing environments will be addressed through various quantitative methods and modeling approaches.

COURSE CONTENTS:

1.	Production systems: Nature, classification and hierarchical decision framework	3 classes
2.	Product design and concurrent engineering	2 classes
3.	Forecasting systems	9 classes
4.	Long-range capacity planning	2 classes
5.	Design of process based production systems	5 classes
6.	Design of serial production systems	3 classes
7.	Design of cellular production systems	3 classes
8.	Design of storage systems	3 classes
9.	Design of material handling systems	3 classes
10.	Facility location	6 classes

LECTURE NOTES: A text book that covers all the material to be discussed in this course is not available. Therefore attendance to lectures is of critical importance for success. A compilation of lecture notes will be available at a photocopier at the beginning of the semester.

REFERENCES: The following books are reserved at the library.

- Askin R.G., and Stanridge, C.R., Modeling and Analysis of Manufacturing Systems, John Wiley and Sons, 1993.
- Elsayed, E.A., and Boucher, T.O., Analysis and Control of Production Systems, Prentice Hall, 1994.
- Francis, R.L., McGinnis, L.F., and White, J.A., Facility Layout and Location: An Analytical Approach, 2nd edition, Prentice Hall, 1992.

FACILITY DESIGN ASSIGNMENT: Students will form teams of THREE members to work on a facility design assignment for a duration of about 4 weeks. Teams are expected to analyze a given case, come up with a good layout design for it and to present their work in a project report. A computerized layout planning software called VisFactory which is available in UnderGraduate Computer Lab of IE department will be used during this project.

GRADING:

Midterm I	: 25%	**March 20, Fri.**	**17:00-19:00**
Midterm II	: 25%	**May 7, Th.**	**17:00-19:00**
Final	: 32%		
Case Assignment	: 18%		

If you miss an exam (only due to severe health condition) then you must provide an official health report on the same day or the next day.