

ISE 440A&B Winter & Spring 2004

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Hours: MW 2:00 – 4:00 and by appointment
Prereq: ISE 333
Text: Facilities Planning, Tompkins et al., 3rd edition, Wiley

Course objective:

Catalog ISE 440A: Introduction to 2-qtr program in which students will learn to design a manufacturing facility. First qtr topics include product and process analysis, plant size, layout and location, and building design, estimation of production time for each operation, production scheduling, and inventory control.

Catalog ISE 440B: Continuation of 440A with team design of a factory and emphasis on selection of process equipment, incentive wage system, quality control system, project management, and layout of facility using both computer and conventional techniques.

Inputs:

Students entering ISE 440A are expected to be able to:

1. Use a 2D CAD program (e.g., AutoCAD)
2. Compare the costs of two design alternatives
3. Formulate and solve a linear programming problem
4. Select appropriate processes for fabricating a given part
5. Organize a technical report

Outcomes:

Upon the completion of ISE 440B, students will be able to:

1. Describe the steps involved in designing a new manufacturing facility
2. Specify the equipment requirements for a manufacturing facility
3. Specify the space requirements for a manufacturing facility
4. Select the appropriate manufacturing equipment for a facility
5. Create a from-to chart for a given production plan
6. Select the appropriate material handling equipment for a facility
7. Design alternate layouts for the departments within a facility
8. Calculate material handling cost associated with a given layout
9. Select the layout for a facility and justify the selection
10. Use facility design software to generate and analyze layouts
11. Identify and analyze the important utilities and structural components of a facility

Grade distribution:

Homework	40.0%
Midterm 1	17.5%
Midterm 2	17.5%
Final Exams (Friday, March 19 10:10 AM)	25.0%

Inclement weather policy:

No one will be required to travel to and from class when safety is an issue.

Scholastic dishonesty policy:

At the discretion of the instructor, a grade of 'F' will be awarded for the first offense. In addition, at the discretion of the instructor, the case will be referred to the Judiciary Office.

Homework policy:

No late homework will be accepted.

Make up exam policy:

Only if university excused.

Attendance policy:

Attendance is not required but it is encouraged. Prior notification is also encouraged.

Course topics:

Facilities planning (Chap. 1 and notes)

Product, process, schedule, and facilities design (Chap. 2)

Flow, space, and activity relationships (Chap. 3)

Material handling and equipment (Chap. 5 and Appendix 5B)

Manufacturing systems (Chap. 8 and notes)

Facilities systems (Chap. 9)

Facility layout (Chap. 6, 10, and notes)

Facility location (Chap. 10 and notes)