

IMSE 555

Industrial Facilities Layout and Design (required)

Spring 2008

Prerequisites: IMSE 530, IMSE 623

Instructor: Shuting Lei
Office: Durland Hall 2012
Office hours: T U 2:00 – 3:30 pm
Phone: 532-3731
E-mail: lei@ksu.edu

Location and Time: Lecture: M W F 12:30 – 1:20 pm in DU 1027

Description: Design of industrial facilities with emphasis on manufacturing engineering and material handling.

Objectives: To understand and practice the basic concepts and principles of facilities planning. These include systematic layout planning, activity relationship chart, materials handling principles, unit load concept, etc.

Contribution to Program Outcomes: (c) – Design a system, component or process, (h) – Understand impact of engineering solutions on society.

Educational Objectives:

Technical Performance Goals: (1) Identify engineering problems related to the production of goods and services, (2) Design and implement efficient production processes and systems to produce goods and services, (3) Measure, evaluate and improve production processes and systems to produce goods and services.

Professional Performance Goals: (1) Participate and function effectively in team environments (2) Communicate effectively in a professional role with specific capability to write technical reports and present results effectively.

Contribution to Professional Component: Provide engineering topics and design experience.

Text:

Required:

- J. A. Tompkins et al., *Facilities Planning*, 3rd Edition, John Wiley & Sons, Inc., 2003.

Recommended:

- S.R. Hanna and S. Konz, *Facility Design and Engineering*, 3rd edition, Holcomb Hathaway, Publishers, Inc., 2004.

Grading Policy:

The course grade will be based on homework, quizzes, a mid-term examination, labs and projects, and a final examination, with the following distribution:

Homework and Quizzes	=10%
Projects	=30%
Mid-Term Exam	=30%
Final Exam	=30%

Academic Accommodations For Disabled Students:

Any student who needs accommodations for disabilities please speak to the instructor as soon as possible so that these may be appropriately arranged.

Academic Honesty:

Plagiarisms and cheating are serious offenses that may result in a failing grade in this course or expulsion from the university. For more information regarding academic honesty at KSU please visit the following web site: <http://www.ksu.edu/uau/fhbook/fhxf.html>.

Main Topics Covered in the Course:

1. Requirements for facilities planning
 - Objectives of facilities planning (Chapter 1)
 - Flow, space and activity relationships (Chapter 3)
 - Personnel requirements (Chapter 4)
2. Alternative designs
 - Material handling (chapter 5)
 - Layout planning methods (chapter 6)
 - Facilities planning models (Chapter 10)
3. Design for various functions
 - Warehouse operations (Chapter 7)
 - Manufacturing systems (Chapter 8)
4. Evaluation of alternative designs
 - Evaluation and selection of facilities design (Chapter 11)
 - Documentation of facilities plan (Chapter 12)