IEDA4200 Design of Logistics and Manufacturing Systems

Spring 2023-24
Tuesday & Thursday, 10:30-11:50am
Room 2304

Instructor

Xuan QIU
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Teaching Assistants

Mr. Zikang LI
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Room 3208

Course Description

This course is designed to provide some fundamental concepts, theories and procedures for the study of facility location, process and material flow analysis, physical layouts, computerized layout planning, warehouse operations, and material handling.

Course Learning Outcomes

- Explain the basic principles of facility planning from a supply chain view point
- Construct facility location models
- Design product, process, and production schedules
- Conduct flow and activity relationship analysis
- Determine space requirement and plant layout
- Identify and apply different algorithms used in computer-aided layout design
- Describe a range of methods, equipment and technologies for material handling
- Explain the basic warehouse operations and describe key warehouse layout design principles

Textbook

Tompkins, J.A., White, J.A., Bozer, Y.A., Tanchoco, M.A. (2010). *Facilities Planning* (4th Ed). Hoboken, NJ: John Wiley and Sons, Inc.

Lab

Time: 14:30 – 15:20, Thursday
Date: 8, 15, 22, 29 Feb.; 16& 18 April (6 lab sessions)
Venue: Room 3207
Lab reports due at the end of the lab session. Late reports will not be accepted!

Assessment and Grades

Homework + Lab reports	15%
Project	15%
Participation	5%
Mid-term exam	25%
Final Exam	40%

- No late homework is accepted! Please submit through canvas.
- Both midterm and final exams are closed books and closed notes

Course Outline

The schedule is subject to change at the instructor's discretion. Students are advised to check the course website regularly for updated information.

	Topics
1	Introduction to Facilities Planning
2	Facility Location Models
3	Machine Layout Algorithms
4	Flow & Activity Relationships
5	Layout Design Algorithms
6	Warehouse Layout Models
7	Product, Process and Schedule Design