

## **ISE 4820/IHE 6820 – Supply Chain Analysis and Design**

### **Course Description**

Develops an understanding of the strategic issues of facility planning and determination of facility requirements; quantitative models for complex facility design, location, and planning decisions are presented, as well as an overview of material handling equipment design and selection.

Offered both face-to-face and online  
Undergraduate/Graduate level – 3 credit hours

Graduate students are expected to lead/engage in discussions at a higher level, will be tested via extra exam questions, and use three additional related journal article sources to complete the literature review portion of the term report.

### **Course Learning Objectives**

Students will learn to:

- Use strategic concepts of facility planning and determination of facility requirements, as well as material handling equipment design and selection;
- Apply quantitative models to complex facility design, location, and planning decisions.

### **Course Learning Outcomes**

After successful completion of the course, students will be able to:

- Use strategic concepts of facility planning and determination of facility requirements, as well as material handling equipment design and selection;
- Apply quantitative models to complex facility design, location, and planning decisions.

### **Tentative Weekly Schedule**

Whether taught in-person, online, or partially online, the course outline remains the same.

Week 1: Course & Facility Planning Introduction  
Week 2: Product, Process and Schedule Design  
Week 3: Homework 1 Due; Facility Layout  
Week 4: Facility Layout  
Week 5: Facility Layout; Preliminary Project/Report Topic Due  
Week 6: Facility Layout; Homework 2 Due  
Week 7: Material Handling Equipment  
Week 8: Material Handling Equipment; Midterm I Exam  
Week 9: Material Handling Equipment & Sortation

Week 10: Warehousing (concepts and crossdocking); Project/Report Progress Report Due

Week 11: DC of my Choice (Discussion Due); Warehousing (order picking)

Week 12: Facility location; Quiz 1

Week 13: Facility location; Project presentations

Week 14: Project presentations; Midterm II Exam

Week 15: No Final Exam, Project/Reports Due