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