



**THE OHIO STATE UNIVERSITY**  
COLLEGE OF ENGINEERING

# Warehouse and Facility Design

## ISE 5430

**Credit Hours:**

3.00 - 3.00

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**Course Levels:**

Undergraduate (1000-5000 level)

Graduate (5000-8000 level)

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**Course Components:**

Lecture

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**Course Description:**

Broad exposure to facility planning and design, and distribution center layout and operations. Topics include current material handling equipment technology, and warehouse systems and operations.

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**Prerequisites and Co-requisites:**

Prereq: Calculus, Linear Algebra, and Linear Programming.

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**Course Goals / Objectives:**

- Understand practical application of facility layout and design concepts and the impact on operations, personnel decisions and company profitability
  - Apply knowledge to support and improve existing warehouse and order fulfillment operations
  - Utilize and integrate learned information from various disciplines, such as Finance, Management, Operations Research, Industrial Engineering, Simulation, etc.
  - Learn to work together on a team
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**Course Topics:**

- Introduction to Facilities Planning
  - Requirements & Tools Needed for Facility Layout or Process Improvement
  - Material Handling Concepts, Unit Load
  - Dock Design – Receiving & Shipping
  - Storage Systems – Space allocation
  - Picking Operations: Picking Optimization – Slotting Software
  - Evaluation of Alternatives – ROI, NPV & Breakeven Analysis
  - Order fulfillment and facility planning
  - Examples of business cases & proposals
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**Designation:**

Elective