IE 651 Warehousing and Transportation

Catalog Description

This course provides an introduction to the basic missions and functions of a warehouse or storage facility from receipt of goods, through storage and retrieval, to order picking consolidation and shipping. In an effort to incorporate the logistics processes before and after storage, the course also includes the study of transportation systems, their evolution, performance and management. Important analytical tools used by transportation professionals will be discussed and applied in laboratory exercises. Students will be introduced to the use of *TransCAD* software to solve transportation-related problems.

Prerequisites

None

Textbook

Frazelle, E., *World Class Warehousing and Material Handling,* McGraw-Hill, 2001.

Additional References

T.B.D.

Course Coordinator

Dr. G. Don Taylor, Professor, Department of Industrial Engineering

Course Objectives

Provide an overview of warehouse functions and operations

Develop an understanding of how to seamlessly integrate warehousing functions with both manufacturing and transportation systems.

Introduce the student to transportation management systems and techniques.

Topics

Definitions--Warehouse, distribution center, cross-docks, breakbulk, etc., (2 hours)
Missions and functions of various types of warehouses (2 hours)
Warehouse ownership-public, private, contract (3 hours)
Warehouse networks-location, number, connectivity, etc. (3 hours)
Costs-transportation, inventory carrying, fixed costs, cost trade-offs, etc. (3 hours)
Information systems-WMS, comparisons (2 hours)
Layout, slotting, and order picking-various types (3 hours)
Material handling issues & integration (3 hours)
Transportation networks (4 hours)
Role of government in transportation, deregulation, containerization and intermodalism (4 hours)
Introduction to GIS-T, *TransCAD* tutorial (6 hours)
Transportation planning laboratories using *TransCAD* (vehicle routing, network flow models, facility location models) (7 hours)

Computer Usage

GIS-T, *TransCAD,* MS Office suite

Evaluation

Exams (two)	50%
Warehousing Homework	25%
Transportation Homework	25%

Professional Component Contribution

This course provides essential tools in support of a basic component of logistics. The storage and physical movement of goods almost define logistics. No certificate program in logistics would be complete without inclusion of these topics.

Relationship To Program Objectives

This course addresses the following program objectives: (1) Prepare students for the professional practice of logistics; and (2) Provide opportunities for design and practical experiences.

Syllabus Prepared by

Dr. G. Don Taylor, January 2003