



THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Theory of Linear Optimization

ISE 5201

Credit Hours:

3.00 - 3.00

Course Levels:

Undergraduate (1000-5000 level)

Graduate

Course Components:

Lecture

Course Description:

Introduction to linear optimization with an emphasis on theory. Topics include model formulation, solution methods, polyhedral and duality theory, sensitivity analysis, and software.

Prerequisites and Co-requisites:

Prereq: Math 2174, 2415, 2568, or 4568, and permission of instructor; or Grad standing.

Course Goals / Objectives:

- Understand how to model problems with linear objective and constraints.
 - Understand the details of the simplex method and the associated polyhedral theory.
 - Understand duality and conduct sensitivity and parametric analysis.
 - Understand methods for LP Decomposition.
 - Understand interior point methods for linear programs.
 - Use modeling and optimization software packages to model and solve linear programs.
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Course Topics:

- Linear Programming Applications
 - Simplex Method
 - Polyhedral Theory
 - Duality, sensitivity, and Parametric Analysis
 - Decomposition methods
 - Interior point methods
 - Software
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Designation:

Elective