



# Industrial Ecology

## ISE 5450

**Credit Hours:**

3.00 - 3.00

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**Course Levels:**

Undergraduate (1000-5000 level)

Graduate

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**Course Components:**

Lecture

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**Course Description:**

Introduction to the status of resources, principles and methods of life cycle assessment, environmentally conscious product and facility design, production and recycling methods.

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**Prerequisites and Co-requisites:**

Prereq: Sr or Grad standing in Engineering.

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**Course Goals / Objectives:**

- Define Industrial Ecology and the role of Industrial Engineers in this arena
  - Describe the scientific, historical, societal, and political context of Industrial Ecology
  - Define methods of environmental risk assessment
  - Describe the current status of natural resources
  - Conduct Life Cycle Assessments per ISO 14000 guidelines
  - Identify the influence of product and facility design and process selection on energy consumption and environmental impact
  - Describe examples of the concepts of industrial ecosystems and symbiosis
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**Course Topics:**

- Intro; physical, biological, and societal framework
  - Design for the environment; life cycle analysis; resources
  - Corporate industrial ecology; Leed building certification
  - System-level industrial ecology; industrial symbiosis 10
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**Designation:**

Elective