



THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Environmental Engineering Bioprocesses

ENVENG 5110

Credit Hours:

3.00 - 3.00

Course Levels:

Undergraduate (1000-5000 level)

Graduate (5000-8000 level)

Course Components:

Lecture

Course Description:

Principles and design of biological processes in environmental engineering.

Prerequisites and Co-requisites:

Prereq: 3200 (511), or Grad standing.

Course Goals / Objectives:

- Develop a basic understanding of microbial kinetics as they relate to environmental engineering processes
 - Be able to design a reactor
 - Develop specific knowledge about the analysis, design and performance of activated sludge processes, lagoons, trickling filters, anaerobic biological processes, bioremediation, and engineered nitrification and denitrification processes
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Course Topics:

- Course introduction, stoichiometry and cell energetics
 - Microbial kinetics and biofilm kinetics
 - Reactors
 - Activated sludge and biofilm processes
 - Nitrification and denitrification
 - Anaerobic treatment
 - Detoxification of hazardous chemicals
 - Bioremediation
 - Biological processes for energy recovery
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Designation:

Required