



THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Chemical and Biomolecular Engineering Process Design and Development

CBE 4764

Credit Hours:

3.00

Course Levels:

Undergraduate (1000-5000 level)

Course Components:

Lecture
Recitation

Course Description:

Culminating design experience in Chemical Engineering. Systematic formulation, analysis, and solution of chemical product and process design and related problems

Prerequisites and Co-requisites:

Prereq or concur: 4624, 4755, 4760, and enrollment in CBE or EngPhysics major.

Course Goals / Objectives:

- Demonstrate the principles of process and product design
 - Use process simulation software tools in design and cost calculations.
 - Present information and ideas in a written proposal and oral presentation using appropriate communication media
 - Apply process safety analysis and tools to chemical process and product design problems
 - Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
 - Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
 - GE Reflection/Engag Citizens & Intercultr Comp: Students consider public health, safety, and welfare as well as global, cultural, social, environmental, and economic factors in applying engineering design to produce solutions meeting specified needs
 - GE Reflection - Personal and Professional Development: Students individually assess and pursue personal professional growth in concert with project requirements and personal career goals.
 - GE Reflection - Cultivate Engineering Mindset: Students develop an engineering mindset that demonstrates constant curiosity, makes connections between disparate bodies of information, and seeks opportunities to create value.
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Course Topics:

- Capstone Project - open-ended in nature and requiring project scoping, scheduling, management, technical development or modeling, safety/health/environmental analysis, and economic profitability determination.
 - Continuous process design tools
 - Batch process design tools
 - Sustainable process and product design
 - Industrial career paths in chemical engineering
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Designation:

Required