

CHE 1001 Introduction to Chemical Engineering

Required course for ChE program

Catalog Description: Overview of the chemical engineering curriculum, professionalism, career opportunities, and issues of safety and environment. Introduction to chemical engineering calculations; units, dimensions and conversion factors.

Recent Textbook: *Chemical Process Safety*, 2nd Edition (2002) by Daniel A. Crowl and Joseph F. Louvar, published by Prentice-Hall.

References: Various newspaper clippings, NSPE and AIChE Codes of Ethics, technical writing manuals

Set of Course Goals/Objectives: By the end of the semester the students will be able to:

1. Correctly and consistently convert between different unit systems
2. Describe the role of Chemical Engineers in current events
3. Write a resume commensurate with the student's educational and employment background.
4. Identify potential safety problems and suggest reasonable courses of action to remedy them
5. Evaluate an ethical dilemma, select an appropriate ethical code for dealing with the situation, and justify their resolution of the problem

Prerequisites by Topic: None

Major Topics Covered in the Course: 1 Unit Conversions, 2 Resume writing, 3 Safety, 4 Ethics 5 The Profession of Chemical Engineering

Class/Laboratory Schedule: Class meets for one 50-minute session each week for 14 weeks.

Professional Component Contribution: This course provides one hour of engineering science.

Relationship to Student Outcomes	
outcome:	Description of related course content:
(a) an ability to apply knowledge of mathematics, science and engineering	Homework assignments and laboratory assignments requires the student to build on knowledge of mathematics and science/engineering analysis.
(b) an ability to design and conduct experiments, as well as to analyze and interpret data	
(c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability	
(d) an ability to function on multi-disciplinary teams	

Relationship to Student Outcomes	
(e) an ability to identify, formulate, and solve engineering problems	This is required in various in-class and out-of-class projects
(f) an understanding of professional and ethical responsibility	The NSPE and AIChE codes of ethics are discussed and applied to case studies. PE licensing is discussed.
(g) an ability to communicate effectively	Oral presentations are required. Each student is required to submit biweekly homework assignments as well as taking two exams during the semester. In addition, 2 written reports are required.
(h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context	
(i) a recognition of the need for, and an ability to engage in life-long learning	Through resume writing, the students learn of the importance of continuing to develop their skills
(j) a knowledge of contemporary issues	Examples of engineering failures are used to demonstrate the importance of proper units, current news studies are discussed whenever possible
(k) an ability to use the techniques, skills and modern engineering tools necessary for engineering practice	

Modified by: Laura Ford, Daniel Crunkleton, 04/26/07

Modified by: Christi Patton, 4/28/2008