

## ChE 101, 201, 301, 401 – CHEMICAL ENGINEERING PROJECTS

Type (check one):                      Required:      X                        Elective:            

**2005-2006 Catalog Data:**                      ChE 101, 201, 301, 401. Chemical Engineering Projects. A four-semester sequence of courses where all of the students participate in technical team projects and learn about written and oral presentations, use of the library, and other sources to retrieve technical data, prepare for and make effective job searches. Participate in the local Student AIChE chapter meeting, participate in discussions with panels of practicing engineers from local industry, and visit local chemical plants. Industrial safety, ethics, environmental responsibility and other suitable topics are covered. The seniors also spend part of their time on Senior Projects, which are described under ChE 401 and ChE 402 (Senior Projects) in the catalog where they earn an extra credit. *Three semesters; one credit each.*

**Prerequisites:**                                      None

**Co-Requisites:**                                    None

**Textbook:**    None

**Other Required Materials:**                    Handouts from the instructor and other invited speakers.

**Other References:**                                None

**Instructor:**                                         Dr. Asit K. Ray, Professor of Chemical Engineering

**Course Objectives:**

1. Students will learn how to work in groups of four consisting of students from different classes to work on technical team projects.
2. Learn how to make effective technical oral and written presentations.
3. Learn how to use library online database and other sources to retrieve technical data.
4. Learn to prepare and make effective job searches.
5. Get involved with local student AIChE chapter in attending meetings and participating in special activities.
6. Develop rapport with panel of practicing engineers from local industry and learn what makes a successful chemical engineer.
7. Become knowledgeable with industrial safety, ethics, environmental responsibility and other suitable topics by listening to invited speakers.
8. Have first-hand experience of operations of chemical plants through plant visits.

**Prerequisites by Topics:**                        None

**Topics:**

1. Special Technical Team Projects
2. Technical Report Writing and Oral Presentation
3. Health, Safety, and Regulatory Issues
4. Prepare, Plan and Look for Jobs
5. Environment and the Engineer
6. Ethics in Engineering and other relevant topics
7. Library Information Retrieval
8. Panel Discussion by Industry Professional, will include discussions on production, maintenance, and sustenance of chemical products.
9. Student Learning
10. Visit to a Chemical Plant

**ChE 101, 201, 301, 401 – Chemical Engineering Projects, continued –**

**Class Schedule:** One 90-minute session per week

**Prepared by:** Asit K. Ray, Ph.D. **Date:** September 2005

**Professional Component:  
ChE 101, 201, 301, 401 Chemical Engineering Projects**

Category (check one)	<input type="checkbox"/> Math/Basic Science <input checked="" type="checkbox"/> Engineering <input type="checkbox"/> General Education <input type="checkbox"/> Other
Design (check one)	<input type="checkbox"/> Significant <input type="checkbox"/> Some <input checked="" type="checkbox"/> None
Realistic Constraints (check all that apply)	<input checked="" type="checkbox"/> Economic <input checked="" type="checkbox"/> Environmental Sustainability <input type="checkbox"/> Manufacturability <input checked="" type="checkbox"/> Ethical <input checked="" type="checkbox"/> Health & Safety <input type="checkbox"/> Social <input type="checkbox"/> Political

**Relationship to Program Outcomes:**

Check all that apply:

- (a) an ability to apply knowledge of mathematics, science, and engineering
- (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
- (d) an ability to function on multi-disciplinary teams
- (e) an ability to identify, formulate, and solve engineering problems
- (f) an understanding of professional and ethical responsibility
- (g) an ability to communicate effectively
- (h) the broad education necessary to understand the impact of engineering solutions in a global and societal context
- (i) a recognition of the need for and an ability to engage in life-long learning
- (j) a knowledge of contemporary issues
- (k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice