

Chemical Engineering 391

Chemical Engineering Career Skills

Fall, 2015
M W 1:00-1:50 pm, 369 CB

Professor: Thomas H. Fletcher, 350E CB, 422-6236 (tom_fletcher@byu.edu)
Office Hours: As available, or by appointment.
Class web page: <http://www.et.byu.edu/~tom/classes/391/391.html>

Assistant:

Catalog Description:

Professional, communication, and life-long learning skills. Field trip to chemical process facility.

Goals:

1. To help students build career skills necessary for chemical engineers by providing training and experience in the following areas:
 - a. Presentation of technical material
 - b. Job interviews
 - c. Resume writing
 - d. Life-long learning
 - e. Job hunting
2. To gain familiarity with chemical processes and corresponding equipment by visiting a nearby industrial chemical engineering process.

Grading:

40%	Presentations, self evaluations
15%	Resume
10%	Field trip and corresponding report
10%	Lifelong learning plan
10%	Industrial seminar attendance
10%	Attendance, participation, and punctuality
5%	Course evaluation

Attendance:

Much of the learning in this course results from participating, observing, and analyzing the presentations given in class. Each student is, therefore, **required to be present at all student presentations**. However, knowing that emergencies arise, you will be allowed to miss 1 of the required presentation sessions without penalty. Beyond that, if a student must miss a class, he/she will please see me as soon as possible to arrange make-up work.

One class period will be devoted to a field trip to a nearby industrial facility. The chemical engineering processes and equipment observed during this field trip are considered vital to your education, and will be referred to in many other classes (fluid dynamics, heat transfer, chemical reactor design, process control, plant design, and others).

There is a College Career Fair on Sept. 24, and many AIChE events surrounding the Career Fair. These events are highly encouraged, since these will help you develop job contacts and interviewing skills.

Participation:

Each student will each give **two seminars** on a chemical engineering topic. One of the seminars will be to simulate a talk at a technical meeting, and the other seminar will be for a business meeting. All presentations will be made using PowerPoint and a computer projector. Each presentation will be videotaped, and each presenter will critically review his or her presentation. A copy of your presentation will be available in a dropbox folder. The self-evaluation must be performed within one week of the presentation so that you can remember the presentation experience. Students will be expected to **dress as professional engineers during their presentations** (suits for the men, dresses or dressy pant suits

for the women). In addition, **each student must fill out an evaluation form on each speaker each day of class**. There will be a moderator for each pair of presentations, so that each student will be able to serve as a moderator. The class will be divided into two groups for the business meeting presentation; you will therefore only have to attend one-half of these presentations. To simulate the business meeting, the audience will ask questions during the presentation instead of just at the end.

Seminar Approval:

Each seminar topic must be approved by me **about 2 weeks** before the presentation date. The topic will be based on research or work the student has done or from an article which the student will select from the suggested list of journals (or another journal). Web sites are useful and easy to use, too, but sometimes contain inaccurate information. The topic/presentation must involve sufficient technical content (mathematics, graphical material, mechanistic reasoning, etc.) to challenge the presenter to do more than a simple qualitative overview of the subject.

Advanced Preparation:

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|-----------------|---|
| 2 weeks before: | • get approval of topic of presentation (submit title to professor) |
| 1 week before: | • advanced preparation approval form |
| | • outline of presentation |
| | • rough draft of visual aids |
| | • 2 questions to be answered (please do not put these questions formally into your presentation!) |

Field Trip:

We (along with other 391 students) will be visiting a nearby industrial facility. Details will be given later in the course.

Industrial Speakers.

We have arranged for B.S. Chemical Engineers to come to BYU to present a seminar about what a B.S. Chemical Engineer actually does, and why they like it. These seminars will be scattered throughout the semester; attendance at the industrial presentations is required.

Course Evaluation

The online course evaluation and in-class ABET evaluation will be required of each student, and will count 5% of the grade.

Honor Code Standards

In keeping with the principles of the BYU Honor Code, students are expected to be honest in all of their academic work. Academic honesty means, most fundamentally, that any work you present as your own must in fact **be** your own work and not that of another. Violations of this principle may result in a failing grade in the course and additional disciplinary action by the university.

Students are also expected to adhere to the Dress and Grooming Standards. Adherence demonstrates respect for yourself and others and ensures an effective learning and working environment. It is the university's expectation, and my own expectation in class, that each student will abide by all Honor Code standards. Please call the Honor Code Office at 422-2847 if you have questions about those standards.

Preventing Sexual Discrimination or Harassment

Sexual discrimination or harassment (including student-to-student harassment) is prohibited both by the law and by Brigham Young University policy. If you feel you are being subjected to sexual discrimination or harassment, please bring your concerns to the professor. Alternatively, you may lodge a complaint with the Equal Employment Office (D-240C ASB) or with the Honor Code Office (4440).

Students with Disabilities

If you have a disability that may affect your performance in this course, you should get in touch with the office of Services for Students with Disabilities (1520 WSC). This office can evaluate your disability and assist the professor in arranging for reasonable accommodations.

Competencies for Ch En 391

Level 2

- Students will learn about chemical processes, units, and corresponding equipment through a field trip.
- Students will be able to give effective, well organized oral presentations of technical material in both business and engineering formats including the handling of questions and the use of appropriate visual aids.
- Students will be able to write an effective personal resume.
- Students will develop a sense of professional community with students, faculty, and others.
- Students will be dedicated to and prepared for a life time of learning.

Level 1

- Students will gain a familiarity with the chemical engineering field, career options, and potential job functions through student presentations and a field trip
- Students will understand the importance of a well-written resume in obtaining professional employment.
- Students will be able to use appropriate information skills, standard office applications, and tools (e.g. WWW, electronic and reference book library searches, modern property databases) to assist in problem solving.
- Students will demonstrate effective reading of technical material.
- Students will demonstrate experience and ability in interviewing skills.

Industry Internship Search Sites

- Indeed.com
- Glassdoors.com
- Aiche.org
- Engineeringjobs.com

Research Internship Sites

- <http://www.pathwaystoscience.org/>
- http://www.nsf.gov/crssprgm/reu/list_result.jsp?unitid=10006
- <http://www.seasoasa.ucla.edu/student-opportunities/internship-pdfs/february-2012/BioMaP%20REU%20Summer%20Research%20Opp..pdf/view>
- http://www.engineering.cornell.edu/research/undergraduate/summer_opportunities.cfm
- http://index.about.com/index?am=broad&q=cancer+research+internships&an=msn_s&askid=e224e3a2-b48d-4ee9-b1c0-b554bc9abd45-0-ab_msb&dqi=&qsrc=999&ad=semD&o=29602&l=sem
- http://www.indeed.com/jobs?q=Summer+Research&utm_source=adcenter&utm_medium=cpc&utm_term=%2Bsummer%20%2Bresearch%20jobs&utm_campaign=Query-7-Search-Broad
- <https://www.fatomei.com/summer-research-internships.html>
- <http://www.aps.org/programs/women/scholarships/ibm/> (for women only)
- <http://www.acs.org/content/acs/en/education/students/college/experienceopp.html>

Also search

- National Labs (Sandia, Los Alamos, Lawrence Livermore, Argonne, etc.)
- REU sites (Research experience for undergraduates)
- Home town area via friends, relatives, church members