Chemical Engineering 391
Chemical Engineering Career Skills

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Catalog Description: Professional, communication and life-long learning skills. Field trip to a campus cooling facility

Goals:

1. Build necessary career skills for chemical engineers by providing training and experience in the following areas:
   a. Technical Presentations
   b. Job Interviews
   c. Resume Writing
   d. Life-long Learning
   e. Networking/Job Search
2. To gain familiarity with chemical processes and corresponding equipment by visiting a nearby chemical engineering process.

Grading:

40%	Presentations/Self Evaluations
15%	Resume
5%	Field Trip and Corresponding Report
5%	Career Fair and Corresponding Report
10%	Life-Long Learning Plan
10%	Industrial Seminar Attendance
10%	Attendance, Participation and Punctuality
5%	Course Evaluation

Attendance: Much of the learning for this course takes place in class, participating, observing and analyzing presentations. **Each student is required to be present at all student presentations**, however, knowing that emergencies may arise, you will be allowed to miss 1 presentation without penalty. Beyond that, if there is a serious reason a student must miss class, the student must see me either before or soon after the missed class. Also, if you have an internship interview or other pertinent important meetings, please let me know before you miss a presentation so that appropriate arrangements can be made.

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

There is a STEM Career Fair on Thursday, February 12. This event is important to attend; attending will help you develop job contacts and improve interviewing skills. Please plan in advance so that you can attend for several hours. I strongly advise you to re-arrange your work schedules as well as try to do homework in advance. It is strongly advised that you also attend "Meet and Greets" set up by the visiting companies you are interested in.

Participation: Each student will give **two 15-minute seminars** on a chemical engineering topic. One of these seminars will be to simulate a talk at a technical meeting, and the other seminar will involve

conducting 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. Each video-taped presentation will be made available in Box.com (https://goo.gl/Tgd8Vz). The self-evaluation must be performed and submitted to me 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 presentation (suits for men, dresses or dressy pantsuits for women). In addition, each student must fill out an evaluation form for each speaker each day of class. There will be a moderator for each presentation, so that each student will serve as a moderator. The class will be divided into two groups for the business meeting presentations- you will only have to attend one-half of these presentations. To simulate a business meeting, the audience will ask questions during the presentation.

Seminar Approval: Each seminar topic must be approved by me approximately **two weeks** before the presentation date. The topic will be based on research or work the student has done or from an article that the student will select from the suggested list of journals (or another journal). Web sites are easy to use 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.

Suggested Journals:

AIChE Journal
I/EC Fundamentals
I/EC Process Design & Development
I/EC Product Research & Development
Chemical & Engineering Progress
Chemical Engineering Science
Canadian J. of Chemical Engineering
J. of Electrochem. Soc.
J. of Applied Electrochemistry

Advanced Preparation:

2 weeks before:

- Get presentation topic approval

1 week before:

- Advanced Preparation Approval Form
- Outline of Presentation
- Rough Draft of Visual Aides
- 2 Questions you will address in your presentation (do not formally include these in your presentation)
- Follow Advanced Preparation Approval Form

Field Trip: We will be visiting the a Cooling plant on the North Side of Campus. We will meet at the facility at the beginning of class in early April. The field trip will take the entire class period. Wear confortable shoes, as you will be standing during the tour.

Course Evaluation: The online course evaluation and in-class ABET evaluation will be required of each student.

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, as well as 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 any questions about those standards.

Preventing Sexual Discrimination or Harassment: Sexual discrimination or harassment (including student-student harassment) is prohibited by both the law and by Brigham Young University policy. If you feel you are being subjected to either, please bring your concerns to me. 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 will need to contact 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 Chemical Engineering 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 resume
- Students will develop a sense of professional community with students, faculty and others.
- Students will be dedicated to and prepared for a lifetime 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 library searches, modern property data bases) to assist in problem solving
- Students will demonstrate effective reading of technical material.
- Students will demonstrate experience and ability in interviewing skills