

Technical Communication for Chemical Engineers

Course description:

In this course students learn to communicate technical information in the context of the professional and ethical practice of engineering. Students will craft and assess technical memos, laboratory reports, oral presentations, resumes, cover letters, and proposals. Students will develop skills in using appropriate grammar, tone, and depth to reach their audience and achieve their objectives.

Instructor:

Professor Ciston sciston@berkeley.edu 101-A Gilman Hall 510-643-8544

Office Hours: Mondays 1:30-3:30 pm, Wednesdays 1:30-3:30 pm

(DUE Drop-in Hours Tuesdays 3:30-4:30 pm)

Graduate Student Instructors:

Sudabeh Jawahery sjawahery@berkeley.edu

Office Hours: Mondays 11:00-12:00 noon, 1 Gilman Hall

Alexandra del Carpio Landry amlandry@berkeley.edu

Office Hours: Thursdays 4:30-5:30 pm, 395 Tan Hall

Class Meeting Schedule:

185-001: Tuesdays & Thursdays 12:30-2:00 pm B51 Hildebrand Hall

185-002: Tuesdays & Thursdays 2:00-3:30 pm B56 Hildebrand Hall

Recommended Texts:

No text is formally required for this course. For a complementary perspective on the material and a reference resource for use in your future, please consider one of these recommended texts:

Tebeaux, Elizabeth and Dragga, Sam. 2011. The Essentials of Technical Communication, second edition. Oxford University Press. ISBN: 978-0199890781

Pfeiffer, William S. and Adkins, Kaye E. 2012. Technical Communication Fundamentals. Pearson Education, Inc. Prentice Hall. ISBN: 978-0-13-237457-6

Content Outline:

1. Explaining Design Decisions: **Oral Presentations, Written Summaries**, Formal Reports
2. Finding a Job: **Resumes and Cover Letters**, Interview Skills, **Networking**
3. Using Technology: Writing Email, **Networking Online**, Video Conferences, **Blogs**
4. Communicating with a General Audience: **Science Saturday Speech**, Word Choice, Perspectives, Blogs, Instructions and User Manuals
5. Creating Proposals: **Team Proposal Documents**
6. Reporting Experimental Data: **Laboratory Reports**, Posters, Journal Articles, Graphs
7. Acting Ethically: **Ethics Case Studies**, Codes, Global Perspectives

Grading:

You will complete written and oral communications assignments including individual and group work throughout the semester. Details on assignment learning objectives, due dates, points available, and grading rubrics are on the bCourses site. Attendance is recorded each class, with one point per day, up to 25 points. There is no distinction between excused or unexcused absences; you can only get an attendance point for being present for the class. Any errors or challenges to the grading must happen within two weeks of receiving your graded material, or before the end of RRR week, whichever comes first. Letter grades follow a straight scale with 90% and above in the A range, 80%-90% in the B range, 70%-80% in the C range, 60%-70% in the D range, and below 60% failing. Dr. Ciston reserves the right to adjust the scale based on her judgment.

Assignment Submissions

Written materials should be uploaded through the assignment function on bCourses. Paper submissions are not required, except for in-class peer review of select materials (resume, cover letter). Oral presentation slides are due online the day before your assigned presentation date. See assignment details on bCourses for details including submission time.

Course Outcomes

At the conclusion of the course, students will be able to:

1. Identify the purpose, desired outcomes, and audience needs for various types of technical communication.
2. Write clearly, directly, and concisely in technical documents.
3. Identify and apply standard formats for common technical documents including resumes, cover letters, statements of purpose, project proposals, design reports, laboratory reports, and journal articles.

4. Use visuals including charts, diagrams, graphs, presentations slides, and tables to communicate ideas.
5. Speak clearly and effectively in situations with and without advanced preparation.
6. Adapt communication approaches for technical, non-technical, and managerial audiences.
7. Apply modern communication technologies.
8. Recognize the ethical responsibility of engineers, and articulate morally justified solutions to ethical problems.

This course supports the Chemical Engineering undergraduate student outcomes (bold):

- 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 within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- d. an ability to function on multidisciplinary 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, economic, environmental, 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.

Expectations of Conduct:

We are privileged to participate in the pursuit of knowledge and truth in higher education, and students and instructors are expected to maintain an environment of respect for the course of study and one another at all times. Our classroom is a safe space for people diverse in traits and ideology to exchange ideas and grow in experience and knowledge. All students are welcome in our course, and we will respect our differences including those in gender, race, ethnicity, nationality, religion, sexual orientation, gender identity, age, culture, experience, and socio-economic background. No form of excessive teasing, discrimination or bullying shall be tolerated at any time. Concerns about classroom environment should be addressed immediately to Dr. Ciston.

Expectations of Academic Integrity

We must respect one another's ideas by giving credit where it is due, avoiding all forms of plagiarism and cheating. Any item submitted by you and that bears your name is presumed to be your own original work that has not previously been submitted for credit in another course unless you obtain prior written approval to do so from the instructor.

In all of your assignments, including your homework or drafts of papers, you may use words or ideas written by other individuals in publications, web sites, or other sources, but **only with proper attribution**. "Proper attribution" means that you have fully identified the original source and extent of your use of the words or ideas of others that you reproduce in your work for this course, usually in the form of an endnote.

As a general rule, if you are citing from a published source or from a web site and the quotation is short (up to a sentence or two) place it in quotation marks; if you employ a longer passage from a publication or web site, please indent it and use single spacing. In both cases, be sure to cite the original source in an endnote.

If you are not clear about the expectations for completing an assignment, be sure to seek clarification from your instructor or GSI beforehand.

Finally, you should keep in mind that as a member of the campus community, you are expected to demonstrate integrity in all of your academic endeavors and will be evaluated on your own merits. So be proud of your academic accomplishments and help to protect and promote academic integrity at Berkeley. The consequences of cheating and academic dishonesty – including a formal discipline file, possible loss of future internship, scholarship, or employment opportunities, and denial of admission to graduate school – are simply not worth it.

--Modified from *Report of the Academic Dishonesty and Plagiarism Subcommittee, June 18, 2004.*

Accommodation of Special Situations and Needs

If you need accommodations related to physical, psychological, or learning abilities, please speak to me after class or during office hours.

If you must miss class because of religious observation or holy day, please speak to me after class or during office hours, at least one week prior to the absence, in order to make arrangements to submit work early. It is your responsibility to review materials outside of class on your own to make up for class time missed. (UC Berkeley's policy: <http://opa.berkeley.edu/religiouscreedpolicy.htm>)

If you must miss class because you are a student athlete, a student musician, or you have an off-campus interview, you must notify me in writing by the second week of the class, or at least two weeks prior to the absence, along with a suggested solution to make up the work early. It is your responsibility to review materials outside of class on your own to make up for class time missed.

Class Schedule of Topics: (subject to modification)

| | Tuesday | | Thursday |
|---------------|--|---------------|--|
| | | 27-Aug | Course Intro, Resumes |
| 1-Sep | Cover Letters, Networking | 3-Sep | Resume and Cover Letter Peer Review |
| 8-Sep | Networking Online | 10-Sep | Impromptu Elevator Pitch |
| 15-Sep | Oral Presentation Principles | 17-Sep | Interview Tips and Mock Interviews |
| 22-Sep | Designing Presentation Slides, Executive Summaries | 24-Sep | Style in Technical Writing |
| 29-Sep | Designing Figures, Lab Report Principles | 1-Oct | Student Design Presentations |
| 6-Oct | Lab Report Principles | 8-Oct | Student Design Presentations |
| 13-Oct | Adapting to Non-Technical Audiences | 15-Oct | Student Design Presentations |
| 20-Oct | Proposal Principles, Literature Search | 22-Oct | Student Design Presentations |
| 27-Oct | Team Workshop | 29-Oct | Student Science Saturday Presentations |
| 3-Nov | Proposal Principles and Sample Critique | 5-Nov | Student Science Saturday Presentations |
| 10-Nov | Intercultural Literacy | 12-Nov | Student Science Saturday Presentations |
| 17-Nov | Ethics Principles | 19-Nov | Student Science Saturday Presentations |
| 24-Nov | Ethics Argumentation | 26-Nov | THANKSGIVING HOLIDAY |
| 1-Dec | Ethics Case Studies | 3-Dec | Course Wrap-Up and Feedback |

Assignment Due Dates: (subject to modification)

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|---------------|--|
| 3-Sep | Draft Resume and Cover Letter for Peer Review |
| 8-Sep | Resume and Cover Letter with Job Advertisement |
| 10-Sep | Impromptu Speech (in class) |
| 22-Sep | Online Networking Profile or Portfolio |
| 29-Sep | Design Executive Summary |
| 30-Sep | Design Presentation Slides |
| 13-Oct | Lab Report |
| 15-Oct | Fill out mid-semester feedback survey |
| 16-Oct | Fill out CATME Team Former Survey |
| 20-Oct | Blog First Draft |
| 27-Oct | Team Planning Form (in class) |
| 27-Oct | Critique of Presentation Video |
| 28-Oct | Science Saturday Presentation Slides |
| 5-Nov | Proposal Outline |
| 9-Nov | Fill out CATME Team Evaluations |
| 10-Nov | Blog Final Draft |
| 17-Nov | Mentoring Log |
| 19-Nov | Proposal First Draft |
| 1-Dec | Ethics Response |
| 3-Dec | Proposal Final Draft |
| 3-Dec | Fill out CATME Team Evaluations |