

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:

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

Office Hours: Mondays 10:30-11:30 am and 3:00-4:00 pm

Wednesdays 3:30-4:30 pm

(Drop-in Hours for Director of Undergraduate Education issues Tuesdays 10:30-11:30 am)

Graduate Student Instructors:

Sam Lim samuellim91@gmail.com Discussion 103

Office Hours: Thursdays 1:00-2:00 pm 495 Tan conference room

Monica Neugebauer m.e.neugebauer@gmail.com Discussion 101

Office Hours: Tuesdays 3:00-4:00 pm Room 100E Hildebrand Library

Frederick Twigg frederick.twigg@berkeley.edu Discussion 102

Office Hours: Wednesdays 5:30-6:30 pm Room 100E Hildebrand Library

Class Meeting Schedule:

Lecture: Wednesdays 10:00-11:00 am 3106 Etcheverry

Discussion 101: Tuesdays 5:00-6:00 pm 285 Cory

Discussion 102: Thursdays 11:00-12:00 noon 75 Evans

Discussion 103: Fridays 11:00-12:00 noon 245 Hearst Gym

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. Defining Your Audience and Purpose
2. Technical Oral Presentations
3. Job Seeking and Networking
4. Technical Reports
5. Project Proposals
6. Acting Ethically

Grading:

You will complete written and oral communications assignments including individual and group work throughout the semester. Details on assignment learning objectives, due dates, submission types, points available, and grading rubrics are on the bCourses site. Participation points (up to 25) are awarded based on engagement in in-class activities, with submission of worksheets or receipts in 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 must follow the submission type indicated in the bCourses assignment description. Most written assignments are submitted online via the bCourses submission mode, and are due just before lecture begins. Oral presentation slides are due online the day before your assigned presentation date, at 7:00 pm. Late work receives a 15% penalty per day, and will not be accepted after three days. See assignment details on bCourses.

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.

Mental Health Resources

During the course of a challenging degree program such as ours, many students may find it helpful to engage one or more of the mental health resources available.

College of Chemistry drop-in Counseling and Psychological Services, Dr. Yu Bi: yu.bi@berkeley
Tuesdays 2:00-4:00 pm, Fridays 10:00-12:00 noon

SafeSpace peer-to-peer anonymous chat platform (mobile-friendly) launching February:
<https://www.facebook.com/SafeSpaceBear>

UC Berkeley Counseling and Psychological Services (Tang Center): <https://uhs.berkeley.edu/counseling>

Class Schedule of Topics: (subject to modification)

	Discussion		Lecture
		Jan 18	Course Intro, Defining Your Audience
Jan 24-27	Practice with Slides, Adapting for Audience	Jan 25	Oral Presentations, Adapting to Non-Technical Audiences
Jan 31-Feb 3	Science Saturday Presentations	Feb 1	Resumes and Cover Letters
Feb 7-10	Science Saturday Presentations	Feb 8	Networking: In Person and Online
Feb 14-17	Science Saturday Presentations	Feb 15	Interviews and Negotiation
Feb 21-24	Science Saturday Presentations	Feb 22	Personal Statements, Style and Tone in Technical Writing
Feb 28-Mar 2	Science Saturday Presentations	Mar 1	Design Reports, Executive Summaries
Mar 7-10	Science Saturday Presentations	Mar 8	Proposal Principles, Literature Search
Mar 14-17	Design Presentations	Mar 15	Proposal Sample Critique
Mar 21-24	Design Presentations	Mar 22	Lab Report Principles: Abstracts, Figures
Apr 4-7	Design Presentations	Apr 5	Team Workshop
Apr 11-14	Design Presentations	Apr 12	Ethics: Principles, Codes, Argumentation

Apr 18-21	Design Presentations	Apr 19	Ethics- Bhopal: A Prayer for Rain
Apr 25-28	Design Presentations	Apr 26	Ethics Case Study Analysis, Course Feedback