

SEC12. Written Professional Communication in Engineering and Applied Science



Course Syllabus – Spring 2022

Section 01: Fridays 1:00-1:55 pm in 104 Watson

Instructor: Dr. Bridget Alex

Contact: balex@caltech.edu

Office: Room 367 in Hixon Writing Center (Center for Student Services 3rd floor)

Office hours: Tuesdays 1 – 2 pm in-person or Zoom; by appointment

Course Description

This class introduces students to workplace writing in professional (non-academic) fields of engineering and the applied sciences. Students will compose professional technical writing in multiple genres and consider the audiences and goals of writing in various industries. Genres include cover letters, resumes, performance reviews, research reports, formal memos, business emails, and professional websites. This course is recommended for students who plan to seek jobs in industry. Fulfills the Institute scientific writing requirement. Enrollment is limited to students in E&AS options and priority is given to seniors. No prerequisites. 3 units (1-0-2)

Grading policy: Letter only.

Learning Outcomes

By the end of this course, you will be able to:

- Describe goals, audiences, and genres (document types) in workplace communication
- Identify and analyze the components of effective writing
- Articulate communication goals and strategies
- Practice techniques to facilitate the writing process
- Improve and gain confidence in your writing and communication abilities
- Evaluate others' writing and provide constructive feedback
- Create and revise professional documents for a range of audiences

The goal of this course is to produce better writers and not just better writing. Put your best effort into every writing opportunity. The more you practice writing (and reading and reviewing others' writing), the more skilled and confident you will become!

Course Materials

We will use Canvas for course documents and assignment submissions.

<https://caltech.instructure.com/courses/3874>

No textbook. All materials will be posted as pdfs or links on Canvas.

Assignments & Grading

Summary

One-to-one meeting.....	2
Participation	
Pre-class assignments.....	28
<i>(4 points each, 7/8 possible assignments included, lowest dropped)</i>	
Attendance.....	7
<i>(1 points per class beginning Week 2, one missed class allowed)</i>	
Writing and Communication Assignments	
Application Packets.....	20
Informational Interview Report.....	20
Personal-Professional Website.....	20
Final survey and reflection.....	3
Total.....	100

Letter Grades

A+	= 98-100
A	= 93-97
A-	= 90-92
B+	= 88-89
B	= 83-87
B-	= 80-82
C+	= 78-79
C	= 73-77
C-	= 70-72
D+	= 68-69
D	= 60-67
F	= 0-59

Assignment details

1) One-to-one meeting: During the first four weeks of class you will schedule a meeting with your Instructor to introduce yourself and discuss course goals. [2 points]

2) Pre-class assignments: Each week a low-stakes assignment will be posted to Canvas. These weekly pre-class assignments are due Thursdays 11:59 pm, *before* our Friday meeting for that week. For example, the Week #2 homework is due Thursday 7 April. [4 points each, lowest score dropped, 28 points total]

3) Participation: Throughout the term you attend class meetings, prepared to engage with the material and classmates. You respectfully listen to classmates and contribute thoughtful comments. All students can miss one class without losing participation points. Beyond that you must receive instructor permission to miss class for an excused absence. [1 point/class starting Week 2, one class dropped, 7 points total]

4) Writing and Communication Assignments: You will have 3 formal writing and communication assignments: application packets for jobs, an informational interview with a professional, and a personal/professional website. These assignments will undergo multiple revisions and reflect the qualities of effective writing and communication. The final versions will be graded according to rubrics on Canvas. [20 points each, 3 assignments, 60 points total]

5) Final survey and reflection: Full credit for completion. [3 points]

Expectations & Policies

Attendance: We will generate knowledge and build community during our class meetings. Attending will enhance your enjoyment and mastery of course material. Attendance is expected and will be reflected in your class participation points (1 point per class possible). **All students have one free “class pass” – you can miss one class without notifying the professor.** Beyond that, you must notify the professor and provide a reason that merits an excused absence, such as sickness, emergencies affecting yourself or those close to you, or interviews for jobs or graduate school. Extenuating circumstances will be handled on a case-by-case basis.

Deadlines and late assignments: I know it is challenging to meet deadlines. You have other priorities. Unanticipated trials will affect us variably at different times. Weekly pre-class assignments are due Thursdays 11:59 pm, unless there is an emergency. Writing assignments are due at their respective deadlines, posted on Canvas and the course calendar. In most cases extensions will be granted provided they are requested at least 3 days prior. Late submissions without prior permission will be penalized 1 point every two days. If you have technical difficulties submitting an assignment, directly email it to your instructor along with screenshots showing the file, the final time it was edited, and the technical issue preventing you from submitting the assignment.

Academic Integrity Policy: You are expected to abide by the Caltech Honor Code: “No member of the Caltech community shall take unfair advantage of any other member of the Caltech community.” In SEC13, discussion and the exchange of ideas are encouraged. However, written work should reflect your own thoughts, inspired by class readings and discussions. Submitted documents must be written independently.

You will give and receive peer feedback. Still, *your words should be your own*. When providing feedback to others, point out elements that you think could be improved. Rather than directly editing another’s writing, explain *what* is difficult to follow as a reader and *why*. When receiving feedback from others, you are still the sole author of your writing. You aren’t required to incorporate their suggestions.

Your improvement as a writer depends upon writing and rewriting (and rewriting) in your own words. Plagiarism is prohibited and does not help you improve. Please read the [Hixon Writing Center’s Guide to Understanding and Avoiding Plagiarism](#). Self-plagiarism is also prohibited.

Classroom Citizenship and Conduct:

This course depends on the community we build. I trust all students to:

- Come to class prepared to engage with course material, your instructor, and peers
- Be open to sharing their ideas and to make space for others' ideas
- Participate in activities with an openness for learning and growth mindset
- Put away electronic devices that interfere with class engagement
- Promote inclusion with your words and actions

Accessibility and accommodations: I am committed to providing an accessible academic setting. The Accessibility Office offers a variety of accommodations and services to students with documented disabilities. Please visit <http://cass.caltech.edu/>

Wellness policy and Covid concerns: I believe in prioritizing mental and physical health of yourself and your loved ones. I encourage you to reach out to me if are feeling overwhelmed or would like help adjusting workload expectations or deadlines. Given the continued concerns and precautions related to Covid, please keep me informed if you encounter any discomfort with being back in-person.

Campus Academic Resources

- **Online Learning:** Resources, FAQs, and more for students learning online; <http://learn.caltech.edu/>
- **Tutoring:** The undergraduate dean's office provides a peer tutoring service; If the course isn't listed, students can talk with the dean's office to arrange for a tutor; <http://deans.caltech.edu/>
- **Writing:** The Hixon Writing Center provides professional writing tutors as well as peer tutors, individual and group writing space, and additional resources; <http://writing.caltech.edu>
- **Registrar & FERPA:** The registrar can answer questions about degree progress, privacy of student records, and course enrollment procedures; <http://registrar.caltech.edu>. The website also lists *Option Representatives* for option-specific advising, policies, and information.
- **Library:** Borrow books, retrieve journal articles, receive guidance about research; <https://www.library.caltech.edu/>
- **Dean of Undergraduate Students:** Wide-ranging assistance addressing issues (academic and other) for undergraduates; <http://deans.caltech.edu>
- **Dean of Graduate Studies:** Wide-ranging assistance addressing issues (academic and other) for graduate students; <http://gradoffice.caltech.edu>

Additional Student Resources

- **Student Wellness Center:** Wide variety of health and wellbeing services; <https://wellness.caltech.edu/>
- **Counseling Services:** Free for all students, regardless of insurance plan; <http://counseling.caltech.edu>
- **Occupational Therapy:** Individual sessions and consultations on building healthy habits and routines, time management, planning and organization, and more. Free for all students; <http://ot.caltech.edu>
- **Center for Inclusion and Diversity:** Resources concerning navigating diversity and inclusion, including staff who can speak with students about challenges of harassment and discrimination; <http://diversitycenter.caltech.edu>
- **Title IX:** Caltech's Title IX Coordinator (titleix@caltech.edu) works with students on issues related to sexual harassment, sexual misconduct, and sex discrimination; <http://titleix.caltech.edu/>
- **Caltech Accessibility Services for Students:** Deans work with students with physical and learning disabilities on accommodation requests and services; <http://cass.caltech.edu>
- **Residential Support:** Resident Associates (RAs) and Residential Life Coordinators (RLCs) are also resources for TAs and students; <http://www.residentialexperience.caltech.edu/>
- **Career Development Center:** Provides resources to help students make career decisions and implement career plans; <http://www.career.caltech.edu>

Course Schedule: Overview

Subject to change. Consult Canvas for up-to-date schedule and assignments.

SUN	MON	TUES	WED	THURS	FRI	SAT
March 27 Week 1 Intro meeting DUE →	28	29	30	31	Apr 1 Asynchronous meeting Intro	2
3 Week 2 Intro meeting DUE →	4	5	6	7 Week 2 Homework DUE	8 Stakes & Audiences	9
10 Week 3 Intro meeting DUE →	11	12	13	14 Week 3 Homework DUE	15 What Makes Writing Good	16
17 Week 4	18	19	20	21 Week 4 Homework DUE	22 Find a Job	23
24 Week 5	25	26	27 <u>Applications</u> <u>DUE</u> Midterms →	28 Week 5 Homework DUE	29 Clarity and Tone	30
May 1 Week 6	2	3	4	5 Week 6 Homework DUE	6 Performance Reviews	7
8 Week 7	9 <u>Informational</u> <u>Interview</u> <u>Reports DUE</u>	10	11	12 Week 7 Homework DUE	13 Engineering a Research Report	14
15 Week 8	16	17	18	19 Week 8 Homework DUE	20 Story Telling in Science	21
22 Week 9	23	24	25	26 Week 9 Homework DUE	27 Panel with Professionals Seniors' Last Day	28
29 Week 10	30 Memorial Day	31	June 1	2	3 No class	4 <u>Website &</u> <u>Survey DUE</u>
5	6 Senior grades DUE	7	8	9	10 End of Term	11

Course Schedule

Subject to change. Consult Canvas for up-to-date schedule.

Week 1 – Introduction

Learning goals:

- describe class goals, routines, and evaluation methods
- summarize class policies
- demo best practices for workshoping writing

Key questions:

- What will do in this class?
- How will you be evaluated?
- How do we grow as writers and STEM communicators?

Week 2: Stakes and Audiences

Learning Goals:

- List workplace communication genres, audiences
- Adapt communications for different audiences
- Meet an industry professional

Key Questions:

- How do you write for different audiences?
- What audiences do professional engineers have?
- Why does effective communication matter in the workplace?

Week 3: What Makes Writing Good

Learning Goals:

- Identify and list qualities of effective STEM writing
- Define content, coherence, cohesion, clarity, and conciseness
- Describe how to learn from models of successful (or unsuccessful) writing

Key Questions:

- What are the qualities of good STEM writing?
- How do we use others' writing to improve our own?

Week 4: Job Applications

Learning Goals:

- Describe the cover/application letter genre
- Write and critique cover letters

Key Questions:

- What qualities should application or cover letters possess?
- How do you tailor your cover letter for particular positions?

Week 5: Clarity and Tone

April 27 Writing & Communication Assignment DUE. Application Packets.

Learning Goals:

- Identify common grammatical features that make sentences weak, ambiguous, noisy
- Practice revising and editing text
- Compare and analyze tone in communications

Key Questions:

- Why are some sentences difficult to understand?
- How do I write prose that is strong, clear, and efficient?
- How do elements like word choice and sentence order influence tone?

Week 6: Performance Reviews

Learning Goals

- Identify qualities of an effective performance review
- Discuss the purpose and pitfalls of performance reviews
- List strategies for writing and receiving performance reviews

Key Questions

- How do evaluate and improve performance in a professional setting?
- What are performance reviews?

Week 7: Engineering a Research Report

Learning Goals

- Respond to a performance review

- Describe components of engineering research reports
- List qualities of effective titles and abstracts
- Trace miscommunication through bad rewrite

Key Questions

- What do engineering research reports look and sound like?
- What makes titles and abstracts effective?

Week 8: Story Telling in Science

May 9 Writing & Communication Assignment DUE. Informational Interview Reports.

Learning Goals

- Explain and identify the ABT outline
- Create a user guide
- Identify qualities of effective figures
- Compare professional websites to identify common elements
- Begin to tell your professional story

Key Questions

- What is the basic story structure in STEM writing?
- How do you write methods, protocols, user instructions?
- How do we communicate with figures and multi-media?
- What belongs on a personal/professional website?

Week 9 Panel with Professionals

Learning Goals

- Relax and hear from professionals about their workplace experiences
- Practice asking questions in a professional panel setting

Pre-class assignment

1. Critique scientific figures
2. Propose questions for panelists
3. Find personal/professional websites to use as models

Week 10

No class.

June 4 Final Writing & Communication Assignment DUE. Build and reflect on a personal/professional website.