AE 2611 - Technical Communications for Aerospace Engineers

Class Time and Location: Friday 12:30-1:20 - SSC 152

Catalog Information

HOURS: 1-0-1
CATALOG DESCRIPTION:
Development of technical communications skills required by aerospace engineers. Includes written, oral and visual communication methods.
CO-REQUISITE:
AE 2610 Introduction to Experimental Methods in Aerospace

- For a number of the exercises, we will use the laboratory reports you will be working on for the AE 2610 lab to practice and hone your technical communication skills.
- If you are not currently enrolled in AE 2610 (because you have previously passed that course), please contact the instructor ASAP to make arrangements.

Instructor

Prof. Mayuresh Patil, Office: Weber 211C
Communication: Outside class time, I strongly prefer you use the Canvas **Inbox app** to contact me, and I will do my best respond as promptly as possible. If you contact me using my standard GT email account do not expect a timely response (i.e., it may take multiple days before you get a response).

Office Hours: Tuesdays 2:00-3:00pm and Fridays 1:30-2:30pm.

Teaching Assistant

Jorge Ortiz Solano, Office: Weber 115
Office Hours: Mondays 2:30-4:30pm in the office or on Teams (Ortiz Solano, Jorge L)

Course Objectives

Develop necessary written, oral, and visual technical communications skills required by aerospace engineers to be effective communicators in a professional environment.

Learning Outcomes

Students will be able to:

1. Create effective graphics to communicate technical data/information
2. Improve their technical writing and editing skills through practice
3. Organize and write an effective technical report
4. Prepare and deliver an effective oral presentation: formal and informal

These outcomes will be achieved through continuous practice in planning, organizing, writing and editing various types of communication products.

Topics Covered

- Course overview, Principles of technical communication
- Technical Writing Basics:
  - Goals and elements of effective technical writing
  - Writing introductions
  - Effectively communicating technical data through graphs/plots
  - Reporting data: how to write about data, creating your "story"
  - Writing styles, and effective use of connectors and transitions
  - Organization and planning of a technical report

- Personal Professional Communications:
  - Practices for effective storytelling
  - Personal Pitch
- Oral Presentation Basics:
  - Goals and elements of effective oral presentations
  - Creating short informal oral pitches
  - Organizing and planning a formal technical presentation
  - Creating effective charts and visual aids

- Other Forms of Technical Communication:
  - Elements of effective progress reports, emails and proposals

- Ethical Issues in Technical Communications

Course Textbook and Learning Management Systems

There is no textbook for this course.

Canvas will be used to provide the content for the course. The modules section will be utilized to help organize information into a structured format, and course material will be organized in the modules. All assignments will be given, turned in, and graded on Canvas.

Piazza will used for course discussions and answering general course questions.

Students are responsible for checking Canvas regularly.

Course Format

This course will be taught in a live (in-class) mode. Most class meetings will involve in-class group activities. However, you will be required to view online lecture videos **before** many of these classes, and complete individual assignments after class each week.

Pre-class videos

Most weeks, you will be required to watch 1-2 short lecture videos. You will need the information in these videos to help with the in-class activities. These videos will usually have "quiz" questions integrated into them that you will need to answer. A few weeks, you may have a different type of assignment that will count towards this part of your grade.

"In-class" small-group activities

There will be live classes held during the scheduled course meeting time (Fridays: 12:30-1:20); **class sessions will not be recorded because they will largely consist of small group work.** So, you need to attend class in-person.

Most weeks, you will be assigned to a small group of students. The group will have an assignment to discuss a topic and provide a report on the group discussion - or prepare/edit a communication product. Much of the class time will be used to work on these small group activities and to have class-wide presentations of selected group reports. Your work in these small groups and in class-wide activities will also count towards your participation grade. Each group member will individually submit their summaries of the activity to a Canvas assignment (typically due after class, but on the same day).

Individual Assignments

Each week there will be one or more individual assignments. Typically, you will be given 3-5 days to complete the assignments. Please be mindful of the due dates for assignments. Some assignments will include an initial draft to be peer reviewed by other students, followed by a final submission, while others will just be submitted directly for grading.

Grading and Assignment Rules

Pre-Class Videos: 15%

- Most weeks there will be 1-2 short videos, typically available on Monday of that week, posted on Canvas as an assignment.

- Each week's video(s) must be completed (including any embedded quizzes) by 12:30 pm (before the start of class), as meaningful participation in class activities is dependent on all students having engaged with the lecture content ahead of class.

In-Class participation: 20%

- Includes class attendance, active participation in small-group exercises, and completion of all group reporting assignments on Canvas.
- Reporting assignments for group exercises will typically be due the same day as class.
- Excused absences from scheduled class times will be based on Institute regulations; one unexcused absence will be permitted without penalty.

Individual Assignments: 65%

- Assignments will typically be based on a combination of class exercises and work related to lab reports you prepare for AE 2610.
- Assignments must be posted by the due date/time to be eligible for full credit - NOTE: many assignments will NOT be due during the scheduled lecture class time, but other days during the week. Typically assignments will be due by midnight - but you should check the due times for each assignment.
- After the Canvas assignment closes, submissions will no longer be accepted, unless an extension has been requested and granted (do not email submissions if you miss the final late deadline). Extensions may be granted in cases where extenuating circumstances prevented the student from reasonably completing an assignment on time. Examples include illness, emergencies, family situations, and Institute excused absences. The Office of the Vice President and Dean of Students can assist students with documented emergencies by contacting professors on behalf of the student. You can get more information on this process at https://studentlife.gatech.edu/request-assistance.
- Note that we will sometimes use the peer-review feature on Canvas. Please remember that in these cases, turning in your assignments late affects your classmates in addition to you. The peer reviews will also be graded, and failure to perform meaningful reviews of the peer reviews assigned to you not only impact your grade, but also impact your classmates.

When submitting assignments, make sure any required attachments are properly uploaded and are the correct file, as students are responsible for successfully uploading the required assignments by the deadlines.

Exams: There are no tests or exams in this class.

If you ever find yourself in any situation in which an unexpected personal challenge is preventing you from performing your best in the course, please reach out so we can come up with a plan for you.

Course Grades:
The following rubric will be used to determine course grades.

A = ≥90%
B = 80-89.99%
C = 70-79.99%
D = 60-69.99%
F = <60%

Grade Disputes:

If you believe any of your assignments has been graded incorrectly, please contact **the instructor** stating your specific concern and it will be reviewed.

Collaboration & Group Work

Each assignment will be clearly labelled as either an individual or group projects. For individual projects, their should be no form of collaboration with others beyond help using specific software or tools (e.g., using MS Word® for editing, how to control the appearance of graphs in Matlab® and Excel®). For group projects, collaboration can only extend to other members of your assigned group/team.

Academic Integrity

Georgia Tech and the School of Aerospace Engineering value honesty and integrity of all members of our community. Academic dishonesty is not tolerated. This includes cheating, lying about course matters, plagiarism, or helping others commit a violation of the Honor Code. Plagiarism includes reproducing the words or visual/graphical expressions of others without clear attribution and citation. Students are reminded of the obligations and expectations associated with the Georgia Tech Academic Honor Code, available online at https://osi.gatech.edu/students/honor-code, and specifically the GT Honor Challenge Statement:

"I commit to uphold the ideals of honor and integrity by refusing to betray the trust bestowed upon me as a member of the Georgia Tech community."

Below are some guidelines to help you understand what constitutes appropriate academic behavior in this course:

- Students should not review or and must not use materials prepared by students from previous semesters. This includes the use of old assignments.
- Plagiarism of any kind is not permitted.
- Students are permitted and encouraged to work collaboratively on group assignments, but work identified as an individual assignment must be the student's own work. Copying another student's work is not permitted, even if cited.

- On group assignments, students are expected to do their fair share of the work. If there is an instance where a student is not contributing to a group project, the team members should notify the instructor as soon as possible.

Any student suspected of cheating or plagiarizing will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

AI Usage

In this course, the use of AI tools is permitted as a means to enhance your work. However, any work you submit must be your own! Reaching out to an AI tool should be treated similarly to asking someone else for feedback. For example, you would first create your own draft of a document, and then might ask a peer for editing advice. Treat AI tools the same way; first prepare you own work, then use the AI tool as an editor. Furthermore, you would likely not accept all the recommendations of your editor, but use it as feedback to help improve your work. So if you so use an AI tool as an editor, make sure you review that product and improve upon it further.

In summary, direct replication of AI-generated content without meaningful modification or the use of AI to generate original content is not acceptable. Furthermore, any AI assistance in generating content must be appropriately cited.

To ensure transparency and uphold academic integrity, you are required to document all AI prompts and corresponding AI-generated outputs. This documentation should be included within your submission. If no such documentation is provided, it will be assumed that no AI tools were utilized, and the work is entirely your own. Inclusion of anything you did not write in your assignments without proper citation will be treated as plagiarism and an academic misconduct case. If you are unsure if you have gone to far consider these simple guidelines: (1) avoid hitting ”copy” in a conversation with an AI assistant; (2) do not have both your assignment and the AI agent open at the same time; and (3) avoid using tools that directly add content to your submission.

Note: use of spell and grammar checkers are acceptable (and encouraged) for all assignments. But again be careful, spell and grammar checkers are not infallible and will not always improve your work.

Learning Accommodations

If needed, we will make classroom accommodations for students with documented disabilities. These accommodations must be arranged in advance and in accordance with the Office of Disability Services. (http://disabilityservices.gatech.edu).

Please also contact the instructor as soon as possible in order to set up a time to discuss your learning needs.

Student-Faculty Expectations Agreement

At Georgia Tech we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. See http://www.catalog.gatech.edu/rules/22/ for an articulation of some basic expectation that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.

Student Health and Well-Being

Georgia Tech and the School of Aerospace Engineering value the complete well-being of all members of our community, which includes professional, physical, spiritual, emotional, and social dimensions. We also understand that many students experience stress through a variety of academic, financial and personal experiences. We are here for you and want to make you aware of specific resources available should you need them.

(Links to an external site.)

Respect for Our Community

Our class environment, both physical and virtual, needs to be a place of respect for all members of the Georgia Tech community and the larger society. The diversity and contributions from all members of our class and our community are essential to a safe and effective learning environment. As a matter of policy, Georgia Tech is committed to equal opportunity, a culture of inclusion, and an environment free from discrimination and harassment in its educational programs. Georgia Tech prohibits discrimination, including discriminatory harassment, on the basis of race, ethnicity, ancestry, color, religion, sex (including pregnancy), sexual orientation, gender identity, national origin, age, disability, genetics, or veteran status in its programs and activities.