ESC 102 Technical Writing & Professional Communication

Washkewicz College of Engineering

Catalog: ESC 102 Technical Writing & Professional Communication (3-0-3).

Description: Technical writing as a process for organized and concise expression of ideas and knowledgeable opinion; ethical standards; oral presentations; research methods; source documentation; writing memos, letters, reports, and proposals; writing in teams; running an effective meeting; utilizing word-processing software to assist in the writing and presentation process.

Prerequisite: ENG 101 or pre-test.

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Textbooks:

1. *Technical Writing Workbook, Writing with Clarity.*
2. *A Guide to Writing as an Engineer*, 3rd or 4th Edition, David Beer & David McMurrey, Wiley.
2. Personal notebook: to collect writings, drawings, and assignments.
3. Chicago Manual of Style (15th or 16th edition) not required.

Course Objectives: This course is intended to:

1. Provide engineering and science students an introduction to technical writing.
2. Improve students' writing for readability, clarity, and development of logical argument.
3. Ensure students understand acceptable ethical standards in writing and illustration and can appropriately document sources of information.
4. Introduce students to various media for information research.
5. Enable students to development effective communication skills through written and verbal means.

Expected Outcomes:

Upon successful completion of this course, students will be able to:

1. Compose letters, memos, and emails that are concise and easily read.
2. Appreciate the needs of the recipient.
3. Research technical topics and organize technical data.
4. Format and organize written reports.
5. Understand what constitutes plagiarism and copyright violation.

Program Outcomes:

This course contributes to the following programmatic outcomes:
a) An ability to function on multi-disciplinary teams,
b) An ability to identify, formulate, and solve engineering problems,
c) An understanding of professional and ethical responsibility,
d) An ability to communicate effectively.
e) A broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context

Grading:

The course grade will be based on several short assignments, progress report, Capstone assignment, oral presentation, vocabulary, and mastery of the mechanical elements of Standard Written English, midterm examination, and final examination. An average level of performance ("C" or better) in application of the elements of Standard Written English is required to receive a passing grade for the course.

The formula for the overall course average is numerically determined:

Course Grades, total of 325 possible points

1. Class Participation Points 70 points
2. Engineers in the News: 20 points
3. Pass Mid Term: 30 points
4. Meeting with Robert's Rules of Order: 50 points
5. Proposal: 50
6. Oral Presentation: 50 points
7. Final Capstone Report: 100 points.

Grading written material is extremely subjective (an unfortunate reality that is characteristic of technical writing in general). Grades are a result of the skills you exhibit through your written work and the interpretation of the quality of that work by the instructor. Because of the subjective nature, your written materials are graded on a letter basis. However, to satisfy the engineering need for precision, the letter grades are interpreted numerically as indicated below:

A = 94 - 100	B+ = 86 - 89	C+ = 75- 79
A- = 90 - 93	B = 82- 85	C = 66 - 74
	B- = 80 - 81	D = 60 - 65

Written assignments are all single-spaced.

Attendance.

Attendance records are used at the end of the semester to award extra points or lower grades. **You may have two unexcused absences**.

Do not use these for student presentations at the end of the year.

Attendance records are used at the end of the semester to raise or lower grades.
In other words, an **A-** may be raised to an **A** based on your good attendance and participation.

NOTE: Grades will be lowered based on poor attendance.

Class Policies:

Philosophy. Good writing can be learned by anyone. Like anything else, it comes as a result of practice. To this end, you are encouraged to have classmates/family/friends review and critique each assignment before it is turned in. Fresh viewpoints can point out mistakes and help eliminate "noise" that may otherwise be overlooked. Your work however, must be your own.

Suggestions and critiques are helpful and **are not** plagiarism; having someone write your work for you or copying the work of others **is**, and will not be accepted. Serious consequences, outlined in the *Student Code of Conduct*, will befall anyone who plagiarizes material.

Distractions. Students should make every effort to be in class on time.
Entering and leaving the classroom during the class period is a distraction for the other class members as well as the instructor. If you must arrive late, or must leave early, please let the instructor know ahead of time. **PLEASE** turn off your cell phone when attending class.

Assignments and Projects:

The assignments for this course are explained below in the order they are listed in the *Grading* section. Reference to the assignments identified in the *textbook.*

Class Participation Assignment. You are graded on how well you evaluate another student's workbook assignments referred to as *Peer Evaluations*.

Engineers in the News. Short in-class presentation worth 20 points.

Short Assignments. Short assignments are a collection of letters, memos, reports, and revisions that occur during the first half of the term. The letter, memo, and resume are typically one to three pages each (single-spaced).

*Proposal***.** This report is expected to be three pages **single spaced**, written by you alone. You may select a class topic or base your proposal the same theme you are using for your presentation and Capstone report.

*Capstone Presentation***.** Oral presentations occur late in the term and consist of a presentation of the students' Capstone Project. The Capstone assignment is accomplished in teams of two students and each must contribute equally in the presentation. The presentation may utilize PowerPoint, OpenOffice Impress, Prezi, (or comparable presentation software), and be 15 minutes in length. You may use other materials such as handouts or posters.

*Capstone Project***.** The Capstone assignment is a research paper on a technical topic. Subjects range from automotive power-plants to alternative energy systems, from underground housing to communities on Mars. Students must work in groups of two, perform research, cite references, organize data and information, and complete a written report of **15-20 pages**,
single-spaced.

The oral presentation and progress report are intermediate assignments in the process of completing the final Capstone Project.

Technical Writing Workbook
Weekly Assignments for ESC102

Workbook Assignments	3rd Edition Reference Chapter	4th Edition Reference Chapter
Week 1.	Spring Break	No Classes
Week 2. Chapter 1. Writing Professional Email Assignment: Correct a confusing email sent by a professional engineer.	Chapter 4	Chapter 4
Week 3. Chapter 2. Testing Your Resume Assignment: Using your resume, write a cover letter to apply for a job listed online.	Chapter 10	Chapter 10
Week 4. Chapter 3. Applying Styles to a Document Assignment: Using a defined boilerplate for a	Chapter 3	Chapter 3

document, update the different headings, paragraph styles, fonts, and spacing as required.	Chapter 7	Chapter 7
Week 5. Chapter 4. Constructing Tables. Assignment: Find the mistakes in a provided table following the guidelines of the class lecture.	Chapter 7 / Lecture	Chapter 7 / Lecture
Week 5. Chapter 5. Understanding Graphic Formats Assignment: When to use RGB or CMYK graphics. Know the difference between raster and vector graphics.	Chapter 5	Chapter 5
Week 6. Chapter 6. Writing a Product Specification Sheet Assignment: Create this document using tables, graphics, and a QR Code.	Chapter 5	Chapter 5
Week 6. Chapter 7. Constructing an Instruction Manual Assignment: Create an instruction manual using imperative commands, charts, or images, and use the different levels of notification or warning.	Lecture	Lecture
Week 6. Chapter 8. Designing Quad Charts Assignment: Create a Quad Chart using a template provided by NASA, DARPA, US Navy, or any other source to present an idea you have designed or imagined.	Lecture	Lecture
Week 7. Chapter 9. Formulating Convincing Lab Reports Assignment: Instructor will select a topic for you to research and report your findings using tables, charts, and other graphics.	Chapter 5	Chapter 5

Week 8.		
Chapter 10. Writing a Proposal Assignment: By using a technique called “Drill Down to Your Solution”, find one cause of the main problem you wish to solve in your proposal, and submit one solution to solve that cause.	Chapter 5	Chapter 5
Week 9.		
Chapter 11. Working as a team.	Lecture	Lecture
11.1 Developing a Thesis Statement. Assignment: Construct the initial argument you wish to discuss in a research paper.		
11.2 Outlining Your Report Assignment: Select five or six main ideas that you will cover in your research paper.		
11.3 Researching your Idea. Assignment: Visit the librarian to locate material for a Research Report. Find several sources you could use to develop each of the five major points of your research paper. Use the different styles of citing the references you have discovered (MLA or CMOS preferred).		
11.4 Paraphrasing the Written Word Assignment: Rewrite a section of one of your team’s research sources and test it against websites that detect plagiarism.		
11.5 Developing an oral presentation Assignment: A group of two or three students present a topic using PowerPoint or other similar software. Slides should be optimized as described in the class lecture, avoiding wordiness, containing supporting graphics, and promoting the central idea section of your presentation.	Lecture	Lecture

11.6 Evaluating a Research Paper Assignment: Using the criteria in this lesson, find a finished research paper to see if it follows the requirements listed in the lesson.	Lecture	Lecture
Week 10. Midterm Exam	**Written exam**	
Week 10. Chapter 12. Using Robert's Rules of Order Assignment: Attend a class meeting of 8-10 students to discuss an article related to your class. You will conduct yourself at the meeting using Robert's Rules of Order. One student will be appointed as chairperson to conduct the day's business.	Lecture	Lecture
Week 11. Chapter 11. Voicing your Podcast. Assignment: Create either a video or voice-only podcast using Audacity, Screen-Cast-Omatic, etc. The topic will be based on a reading provided by the instructor.	Lecture	Lecture /Chapter 12
Week 11. Chapter 14. Publishing your own Weblog Assignment: Write your own online blog. There are many sites available at no charge to the student. The topic will be based on a reading provided by the instructor.	Lecture	Lecture /Chapter 12
Week 12. Chapter 15. Creating a Poster for Presentations. Assignment: Create a poster using an existing template in two, three or four columns with the required sections. (Especially useful for students doing a Design Report of an object they have created in AutoCAD, etc.)	Lecture	- Chapter 15. / Lecture

Week 12. Chapter 11. Re-thinking The Researcher's Notebook. Assignment: Be able to use orthographic and isometric types of drawing to depict an item you would like to present for 3D or Additive Printing.	Lecture
Week 13. Chapter 17. Translating International Communications. Assignment: Correct a letter provided by your instructor. There are many mistakes that should be corrected based on cultural or localized understandings of different words and phrases. Also, create an email to send to someone in another country showing an understanding of currency conversion, date and time structures, metric conversions, and telephone codes	Lecture
Week 13. Chapter 18. Exploring the Patent Application Assignment: necessary to complete the application.	Lecture

Weeks 14-16 are reserved for student presentations on Capstone Projects and submission of the written Capstone Report.