

Reminders

- Assignment 1 due at beginning of class on Monday, August 26.
- EE/CoE – get added to project Google Drive folder by Saturday, August 24
- CS – send URL to logbook page by Friday, August 30.

Senior Project Design Proposal

- The Project Proposal document on the course webpage gives the due dates of the entire proposal process and the grading rubric.
- The Common Proposal Format document gives an overview of the entire proposal document and explains the formatting requirements for the proposal and the CS 497 final report.

Senior Project Design Proposal

- The proposal is submitted in stages.
 - Introduction, problem statement, background (each student)
 - Requirements and specifications (each student)
 - Design approach, statement of work, and budget (each project)

Senior Project Design Proposal

- Each stage includes the previous stage's sections.
- After each stage, the document will be returned with comments by the instructor on both technical content and writing mechanics.
- These comments are expected to be incorporated into the next stage.

Senior Project Design Proposal

- Complete draft is due November 11.
- The final design proposal is due on Reading/Study Day (December 5).

Other Requirements

- As previously noted, all work done in conjunction with the project design proposal must be logged in the on-line design notebook. Entries should be made at least once a week.
- Regular meetings with the project sponsor and/or project advisor are required.

Proposal: Introduction

- The introduction is a 1-3 paragraph summary of the **entire** project.
- Give the **highlights** of the proposal. Enough for the reader to understand the significance of your project.
- The goal is to make the reader want to know more.
- Expect to rewrite the introduction as you develop more understanding of your project.

Proposal: Problem Statement and Background

- The goal of the problem statement is to lay the foundation for the project.
- It should give the reasons why the project is being undertaken and motivate (but not describe) the benefits of the completed project.

Proposal: Problem Statement and Background

- Two questions to be considered:
 - Who are the stakeholder groups?
That is, who is or will be most affected by this project?
 - What is the current situation of each stakeholder group without this project? That is, what is the problem being solved?

Proposal: Problem Statement and Background

- Note that this section does not talk about what the stakeholders want (Requirements and Specifications) or how to implement what the stakeholders want (Design Approach).
- Solely focus on what the current situation is and why this project is needed and/or interesting.

Proposal: Problem Statement and Background

- For some projects, identifying the problem may be straightforward. E.g., most application programs or constructed devices are created to fulfill a perceived need.
- For other projects, there may not be an obvious stakeholder group. E.g., a research project.

Proposal: Problem Statement and Background

- But for any project, there must be a reason for its existence, even if it is just “it would be cool” or “my project sponsor wants this”, and the problem statement is used to articulate why.

Proposal: Problem Statement and Background

- Background is any information needed to understand the problem. This includes, but is not limited to:
 - History
 - Previous attempts at solving the problem and current solutions, if any.
 - Other similar, related work
 - Note: don't forget to cite the sources for this information.

Organization

- The problem statement and background can be provided in either order.
- Sometimes it is best to just state the problem up front and then provide the reasoning and background.

Organization

- Other times it makes more sense to give the background first to build up understanding of the current situation and then summarize with the problem statement.
- Often a motivating example is used to show how the problem affects various stakeholders.

Organization

- There is no required length for any of the proposal sections. The point is to be clear and make the reader understand the project.
- Typical introductions have been a page or so. Problem statement and background sections have been 2-4 double-spaced pages in length.

Assignment: Introduction, Problem Statement & Background

- ***Each student*** is to write the introduction and problem statement sections of the proposal.
 - CS – email PDF file to Dr. Hwang by **Friday, September 6.**
 - EE/CoE – upload to/create in Google Drive subfolder by **Friday, September 6.** File name should contain student last name.

Technical Writing – Definitions

- “Technical writing involves the creation of ***useful documents*** that can be ***clearly understood*** by readers.”
- “Good technical writing ***clarifies jargon***, presenting useful information that is clear and easy to understand for the intended audience;”

Technical Writing – Definitions

- “While grammar, spelling and punctuation are of the utmost importance to technical writing, ***style is not***; it can be sacrificed if doing so ***increases clarity***, which is considered more important to the genre.”
- It is essential that developers and engineers can effectively communicate designs and projects!!!

Where do we use technical writing?

- Manuals
 - Technical
 - Non-technical
- Formal documents
 - Theses
 - Final reports
 - Grant reports
 - Proposals – although these are a different animal
- In-house documents
 - Progress reports
 - Annual review
 - Memos
- Traditionally technical writing is for an audience familiar with a technical field.

Skills from Creative Writing

- Grammar, spelling, punctuation
- Know your audience
- Plan ahead
- Clarity
- Proofreading

Technical Writing Differs from Creative Writing

- Must define terms – acronyms first time used
 - Example: The project engineer is a member of the Institute of Electrical and Electronics Engineers (IEEE).
 - This does not apply to SI units of measure
- Graphics and other aids assist reader
- Don't count pages, just content!!! Less is more!

Technical Writing Differs from Creative Writing

- The most important information should be first
- You are not telling a story
 - Non-chronological: Audience shouldn't have to wait to know results
 - Language should not be “folksy”

Technical Writing Differs from Creative Writing

- Avoid needless complexity in your word choices
 - Utilization..... use
 - Functionality..... feature
- Avoid needless words – NEVER use two words when one will do
 - At the present time..... at present
 - Made the decision..... decided

Technical Writing Differs from Creative Writing

- Combine overlapping sentences
 - The microcontroller used was the Atmel. This was a good choice because of its speed.
 - Better: Due to its speed, the Atmel microcontroller was used.
 - Best: The Atmel was used because of its speed.
- In summary, remember the 3 C's
 - CLEAR
 - CONCISE
 - COMPLETE