Technical Communication
Objectives

- Show why engineers need to know how communicate
- Identify how technical communication is different from high school writing
- Identify what makes a good technical report or presentation
What is technical communication?

- Laboratory reports and memos
- Journal papers
- Guides & Manuals
- Proposals
- Patents
- Specifications
- Progress and design reports
- ..and more!
Technical Communication is Different

High School Writing
- Expository
- Double spaced
- Essay format
- Descriptive
- Length requirement

Technical Communication
- Informative
- Often single spaced
- Professional format
- Concise and precise
- Short is preferred

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Why do engineers need to communicate?

Living in a “sound bite” world, engineers must learn to communicate effectively ... If we place our trust solely in the primacy of logic and technical skills, we will lose the contest for the public’s attention—and in the end, both the public and the engineer will be the loser.

-Norman Augustine, chair of the Human Space Flight Committee
Questions to ask while preparing

- What is my goal?
- Who is my audience?
- What are the limitations of my medium?
- How can I reduce the “noise”?
What is your goal?

- Inform (Provide)
- Request (Obtain)
- Instruct (Give)
- Propose (Suggest)
- Recommend (Suggest)
- Persuade (Convince)
- Record (Document)
Who is your audience?

- Am I delivering the information my audience wants?
  - How much detail should I provide?
  - What level of technical vocabulary is appropriate?
Limitations of your medium

- Written vs. oral communication
- Abstract/executive summary vs. memo vs. report
- Specifications from audience
Reducing the “noise”

- Write or speak clearly and concisely
- Identify facts vs. opinions
- Use the specified format
  - If unspecified, choose a common format
- Use appropriate spelling and grammar
Reducing Noise: Writing concisely

- Using too many words

  Many have made the wise observation that when a stone is in motion rolling down a hill or incline that that moving stone is not as likely to be covered all over with the kind of thick green moss that grows on stationary unmoving things and becomes a nuisance and suggests that those things haven’t moved in a long time and probably won’t move any time soon.
Reducing Noise: Writing concisely

- Using just enough words
  
  A rolling stone gathers no moss.
Reducing Noise: Writing concisely

- Using showy words
  - I am waiting for class to commence.
  - I am waiting for class to start.
  - It is essential that the gauge be cleaned at frequent intervals.
  - Clean the gauge frequently.
Reducing Noise: Writing Clearly

- Ambiguity
- Good paragraph use
- Sections and subsections
- Bullets
Reducing Noise: Presenting Clearly

- I can read this (32 pt.)
  - I can read this, too (28 pt.)
    - We are getting small, but still readable (24 pt.)
      - This is getting too small to read (20 pt.)
        - Please be kind to your audience (16 pt.)
          - Don’t go below 20 point font (12 pt.)
Reducing Noise: Presenting Clearly

- Don’t blind your audience.
Reducing Noise: Presenting Clearly

- Watch size and complexity of figures and tables.

- Use few words.
Reducing Noise: Presenting Clearly?
### Reducing Noise: Presenting Clearly?

| Feeder Id | Node Id | Equipment Id | Phase | WCSR | LL (A) | LL Enr Z (A) | LL Enr Z (A) | LL Enr Z (A) | LL Enr Z (A) | LL (A) | LL Min (A) | LL Min Z (A) | LL (A) | LL Min (A) | LL Min Z (A) | LL (A) | LL Min (A) | LL Min Z (A) | LG Max (A) | LG Min (A) | LG Enr Z (A) | LG Enr Z (A) | LG Enr Z (A) |
|-----------|---------|--------------|-------|------|--------|-------------|-------------|-------------|-------------|--------|-------------|--------------|--------|-------------|--------------|--------|-------------|--------------|---------|-------------|--------------|---------|-------------|--------------|---------|-------------|--------------|
| WPT_1332  | 137498  | C             | 8     | 0    | 0      | 0           | 0           | 0           | 0           | 0      | 0           | 0             | 0      | 0           | 0             | 0      | 0           | 0             | 0      | 0           | 0             | 0      | 0           | 0             | 0      | 0           | 0             |
| WPT_1332  | 137498  | C             | 8     | 0    | 0      | 0           | 0           | 0           | 0           | 0      | 0           | 0             | 0      | 0           | 0             | 0      | 0           | 0             | 0      | 0           | 0             | 0      | 0           | 0             | 0      | 0           | 0             |
| WPT_1332  | 137498  | C             | 8     | 0    | 0      | 0           | 0           | 0           | 0           | 0      | 0           | 0             | 0      | 0           | 0             | 0      | 0           | 0             | 0      | 0           | 0             | 0      | 0           | 0             | 0      | 0           | 0             |
| WPT_1332  | 137498  | C             | 8     | 0    | 0      | 0           | 0           | 0           | 0           | 0      | 0           | 0             | 0      | 0           | 0             | 0      | 0           | 0             | 0      | 0           | 0             | 0      | 0           | 0             | 0      | 0           | 0             |

**Technical Communication**

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Reducing Noise: Presenting Clearly

- Know your slides
- Test the AV equipment beforehand
- Speak to the audience
- Be aware of your movement
- Practice, practice, practice!
A Little Poem Regarding Computer Spell Checkers...

Eye halve a spelling chequer
It came with my pea sea
It plainly marques four my revue
Miss steaks eye kin knot sea.

As soon as a mist ache is maid
It nose bee fore two long
And eye can put the error rite
Its rare lea ever wrong.

Eye strike a key and type a word
And weight four it two say
Weather eye am wrong oar write
It shows me strait a weigh.

Eye have run this poem threw it
I am shore your pleased two no
Its letter perfect awl the weigh
My chequer tolled me sew.
Photos should...

- Be clear with good contrast
- Only include necessary equipment
- Indicate scale
Cold
Getting warmer...
Warmer still...
Hot
Executive Summaries

- Problem or objectives statement
- Lab procedure
- Results
- Obstacles and solutions
- Improvements
- Attachments
Lab Memos

- Heading
- Introduction
- Results
- Conclusion and Recommendation
- Appendix
Lab Reports

- Title Page
- Table of Contents
- List of Figures and Tables
- Executive Summary
- Introduction
- Results
- Conclusion
- References
- Appendix
Report and Memo Resources

▪ On Website
  • See Technical Communication Guide

▪ Instructional staff, especially GTAs
Rubrics: General

- Check AEV Lab Guidelines at:

Questions?

- Technical writing
- Technical presentations
- Lab reports and memos