Intro to Technical Writing

Wentworth Learning Center
Why are we learning this?

- Written communication has become more and more important in succeeding as an engineer.

Two important trends:

1. Increasing expectations of transparency
2. Increasing levels of accountability

Both of these mean that everything you write, from reports to emails, can and will be used to represent you and your company.

What you write matters.
Engineers spend about **40%** of their time engaged in tasks that involve written communication.

This means that not only does what you write *matter*, but you will also be writing *a lot*.
What will your co-op expect?

- Polite, professional email correspondence;
- Concise, clear, and accurate descriptions of your projects for both experts and non-experts;
Most Important

- Clarity
- Conciseness
- Organization
- Goal: Inform Reader

If you can’t explain it *simply*, you don’t understand it well enough.

– Albert Einstein
1. **Your audience**
   - Who is going to be reading this? What do they know?
   - What do they need to have explained in more detail?
   - What information might your audience be looking for if they read your report?
   - What interest or stake do they have in the project?
Ahead of Time

2. Your Project

- What is the goal of the project?
- What did you do at each stage, and can you explain why?
- Could someone replicate your work?

The words you choose matter.
Ahead of Time

- What is the context of the project?
- What other similar projects are there? How did they influence your thinking about this project?
- What other background information about the techniques, materials, etc. used in the project might be important to know?

\[
\frac{AB}{EF} = \frac{CD}{GH}
\]

\[
\frac{10}{x} = \frac{5}{2}
\]

\[
x = 4
\]

\[
2x = 5x
\]
Practice!

- Need: Piece of Paper
- Instructions
  - Fold in Half
  - Tear off upper right hand corner
  - Fold in half again
  - Tear off upper left hand corner
  - Fold in half again
  - Tear off lower right hand corner
  - Open up your paper
Writing a Report

- Prepare a short report on your snowflake prototype

- Consider-
  - Audience- (Classmate)
  - Goal – (replicate your snowflake)

- Elements to include
  - Objectives
  - Steps/Process
  - Results
  - Observations/Conclusions

- Be Clear, Concise and Well Organized
Snowflake Report

- Hand your report to your classmate.
- Make the snowflake in their report
- Provide feedback to each other
<table>
<thead>
<tr>
<th>Areas of Assessment</th>
<th>Absent</th>
<th>Poor</th>
<th>Average</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Content Area 1</td>
<td>Majority of content is missing, incomplete and/or extremely inaccurate</td>
<td>Content shows very basic understanding, and includes several inaccuracies</td>
<td>Content is mostly accurate and shows a basic understanding of key ideas</td>
<td>Content is accurate, thorough and shows clear understanding through appropriate explanation and examples</td>
<td>Meets and exceeds &quot;Good&quot; criteria with rich explanation, examples and application of content ideas</td>
</tr>
<tr>
<td>Max Point Value</td>
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</tr>
<tr>
<td>2. Content Area 2</td>
<td>Majority of content is missing, incomplete and/or extremely inaccurate</td>
<td>Content shows very basic understanding, and includes several inaccuracies</td>
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</tr>
<tr>
<td>3. Content Area 3</td>
<td>Majority of content is missing, incomplete and/or extremely inaccurate</td>
<td>Content shows very basic understanding, and includes several inaccuracies</td>
<td>Content is mostly accurate and shows a basic understanding of key ideas</td>
<td>Content is accurate, thorough and shows clear understanding through appropriate explanation and examples</td>
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</tr>
<tr>
<td>4. Creativity and Innovation</td>
<td>Project is not completed or clearly plagiarized.</td>
<td>Information is largely &quot;cut and paste&quot; from one or two sources and shows little evidence of originality in design or presentation.</td>
<td>Organization and design shows thoughtful preparation and utilizes a variety of resources to create something original.</td>
<td>Meets &quot;Average&quot; criteria PLUS presents information in a visually engaging way using multimedia.</td>
<td>Meets and exceeds &quot;good&quot; criteria to show clear ownership and understanding uses original multimedia</td>
</tr>
<tr>
<td>Max Point Value</td>
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<tr>
<td>5. Research</td>
<td>Project has no resources listed.</td>
<td>Project relies heavily on one resource.</td>
<td>Project utilizes at least two authoritative resources. Correct MLA format is followed.</td>
<td>Project utilizes at least three authoritative resources. Correct MLA format is followed. In bibliography, all media is appropriately cited.</td>
<td>Meets &quot;good&quot; criteria and weaves together information from at least three original resources to create something original</td>
</tr>
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</tr>
</tbody>
</table>

- **Answers**
- **Context**
- **Importance**
<table>
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<tr>
<th>CATEGORY</th>
<th>1 - beginning or incomplete</th>
<th>2 - developing</th>
<th>3 - accomplished</th>
<th>4 - exemplary</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction / Theory</td>
<td>No introduction or presentation of theory</td>
<td>Introduction is too brief or too long.</td>
<td>Introduction could be better written.</td>
<td>Report contains a well written brief introduction to the project.</td>
<td></td>
</tr>
<tr>
<td>Steps/Process</td>
<td>Narrative missing several important project details or not written in narrative form.</td>
<td>Narrative missing some project details or observations or includes insignificant procedural details.</td>
<td>Narrative including important project details, some minor details or observations missing</td>
<td>Narrative of project procedures/results. Omits information that can be assumed by peers. Includes all important procedural details. Includes observations when appropriate and all project details are included.</td>
<td></td>
</tr>
<tr>
<td>Results: data, figures, graphs, calculations, etc</td>
<td>Figures, graphs, tables contain errors or are poorly constructed, have missing titles, captions or numbers, units missing or incorrect, etc. or section is unorganized.</td>
<td>Most figures, graphs, tables OK, some still missing some important or required features or organization is poor.</td>
<td>All figures, graphs, tables are correctly drawn, but some have minor problems or could still be improved or organization could be improved.</td>
<td>All figures, graphs, tables are correctly drawn, are numbered and contain titles/captions. Section is organized and easy to read. Only unusual or difficult calculations are shown.</td>
<td></td>
</tr>
<tr>
<td>Mechanics / Appearance &amp; Formatting</td>
<td>Frequent grammar and/or spelling errors, writing style is rough and immature. Sections out of order, too much handwritten copy, sloppy formatting. No title page</td>
<td>Occasional grammar/spelling errors, generally readable with some rough spots in writing style. Sections in order, contains the minimum allowable amount of handwritten copy, formatting is rough but readable</td>
<td>Less than 3 grammar/spelling errors, mature, readable style. All sections in order, formatting generally good but could still be improved</td>
<td>All grammar/spelling correct and very well-written. All sections in order, well-formatted, very readable. Title page is used</td>
<td></td>
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Assess Classmate

- Using the Rubric, Assess Classmate
- Determine grade
- Share feedback