Some Hints
on
Technical Writing

EE492

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Outline

- Introduction
- Getting Started
- First Draft
- Proofreading, Critical Reading, Revision
- Where to get help?

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Introduction

- Technical writing is…
  - Formal
  - Informative
  - Descriptive
  - Accurate and precise
  - Dispassionate
- Technical writing is *not*…
  - Highly speculative
  - Opinionated or partisan
  - Prone to misinterpretation

Introduction (cont.)

- Informal writing is usually fine for:
  - email
  - lab notebooks
  - memoranda
  - in-house material
- Technical writing is *required* for:
  - Professional papers
  - Technical presentations
  - Project documentation
  - Material for external distribution

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Introduction (cont.)

- Formal writing should not contain:
  - contractions (doesn't, won't, …)
  - personal references (I, we, you, …)
  - casual or slang expressions (crummy, awesome, …)
  - non-authoritative references (web sites…)
  - undefined acronyms or abbreviations
  - mixed measurement units

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Getting Started

- Start with a formal structure
  - Abstract
  - Introduction, summary of related work, and outline
  - Body of paper
    - problem
    - approach, architecture, implementation
    - results, critical evaluation
  - Conclusion and future work
  - Acknowledgements
  - Bibliography
  - Appendix

First Draft

- FIND AN EXEMPLARY PAPER TO USE AS A MODEL!
- Start with the outline: put a few "reminder" sentences in each category
- Prepare a rough sequence of material for the body: enough detail to replicate the procedure
- Decide on required figures, tables, etc.

First Draft (cont.)

- Write the approach, implementation, and results sections first
- Write the conclusions
- Collect bibliographic information and write the summary of related work
- Write the rest of the introduction
- Write the abstract last

First Draft (cont.)

- First write good topic sentences, then create self-sufficient paragraphs
- Introduce the key ideas, explain them, and summarize
- Place [WORKING HERE] notations in the draft where you will need to fill in or revise later
- Focus on content first, then worry about formatting later

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Proofreading & Critical Reading

- Proofreading: look for typographical errors, misspellings, punctuation issues, undefined abbreviations, duplicated or missing words, etc.
  - *Mechanical stuff*
  - *Need not be an expert with the material*
- Critical Reading: *expert* reading to understand the concepts and details

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Revision

- Evaluate the Critical Reading comments:
  - Determine what must be re-ordered vs. what must be rewritten
  - Review the significance of each paragraph
  - Aim for clarity rather than cleverness
- Fix the proofreading problems
- Select an appropriate title: short, specific, and with good search keywords

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The Abstract

- Usually a strict word limit: stick to it!
- Avoid using math, bibliographic references, and background material
- Include the topical area and your key results or findings: potential readers (and search engines) usually rely on the abstract
- Refer to examples to see what is "good"

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Things to Check

- **Tedious or excessive introduction**
  - Select and use good background references.

- **Including unnecessary or irrelevant data or details**
  - Include only the material that is *essential* to the topic at hand.

- **Spelling errors**
  - Check, check, and check again. Beware of errors that aren't easily spotted by spell-check software, and errors *caused* by automatic correction software!

- **Fonts**
  - Required font type and size specs (if any) from the publisher
  - Use a serif font (Times Roman) for easier printed reading

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Things to Check (cont.)

- Units (consistent and accurate)
- Correct references to figures and tables
  - sequential numbering
  - pagination issues
  - keep captions and figures together
- Complete and correct figure labels
  - axes (name AND measurement unit)
  - clear data references (visible and distinguishable)
- Margins and other required formatting details

Where to get help?

- Publisher:
  - guides for authors
  - format templates
  - style guides
- Professional Societies (web sites)
- Books, e.g., *The Elements of Style.* William Strunk Jr. and E.B. White. Macmillan, New York, 1979.