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1.133 M.Eng. Concepts of Engineering Practice
Fall 2007

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Technical Writing

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Importance of Technical Writing

- At least as important as technical competence
 - along with oral presentation
- Reflection of who you are:
 - clarity of thinking
 - adherence to details
- More important as career advances
 - you'll get more practice

Know your audience

- Technical level
 - peers, public, bureaucrats, lawyers
 - dictates style and detail
- Level of formality
 - simple communication ... polished prose
- Anticipate the ultimate audience
 - your email/memo/report can get forwarded!

Guidelines for (professional) email

[M. Green, D. Hatem, LLP, BSCE News 26(10), 2003]

- Always use professional tone
- Review email as carefully as a letter before sending
- Refrain from jokes or slang
- Don't use email to convey bad news
- Never panic and take responsibility in a hasty email for problems on a project
- If in doubt about a controversial email, picture your words enlarged on poster board before a jury
- Just because you delete an email sent in haste, it is probably still accessible for use in a lawsuit

Order of Presentation

- How urgently does audience need information ?
 - important ideas first vs. linear progression
 - your thesis spans both
- Present to the reader, not yourself
 - no need to present ideas in same order they were developed

Example: 50 page thesis

Abstract (~1 page)

important stuff first

Body (~40 pages)

linear progression

e.g., introduction => background

=> methods => results => conclusions

Appendices (~10 pages)

any old order



Increasing
reader
interest

Prose Clarity

1 Document level

- derives from clarity of thought
- keys: abstract, table of contents, subject headings, numbering systems, white space
- suggest: **outline first**

2 Paragraph

- the meat of the document => chose material carefully
- key: parsimony (less is more), logical progression of sentences
- suggest: **use topic sentences, iterate**

Prose Clarity cont'd

3 Sentence

- grammar (toughest for non-native writers)
- keys: parsimony, clear relationship between subject and verb
- suggest: short sentences

4 Word

- key: appropriate and accurate word usage
- suggest: spell check, thesaurus

Writing difficulties

- Getting Started/Getting finished
 - reasons for writers' block
 - tensions underway
- Resources
 - peers
 - MIT Writing Program
 - Writing classes
 - books

Plagiarism

- Borrowing another's words, ideas, data, images, etc. without proper attribution
- Cite the source AND either
 - Paraphrase the material
 - Quote
- Special attention to web-based material
 - Your protection as well as author's
 - Include date
- More information on web, e.g.
 - libraries.mit.edu/tutorials/general/plagiarism.html

Citations

(abbreviated from P. Shanahan)

- Most common is author date:
 - God is good (Adams and Shanahan, 2006)
 - God is great (Adams et al., 2006)
 - Adams (2006) thinks God is great.
- The abbreviation et al. is used with more than two authors.
 - Note period after al, but not et
- In list of references include all authors names

Resumes

- Goal (as in all writing) is communication
 - Can it be understood in 10 seconds
- One page*
 - Balance of text and white space
 - Sufficient margins for printing (suggest .pdf)
- Action words
 - Project, Activity, Result
- OK to summarize subjects taken/being taken