1.133 M.Eng. Concepts of Engineering Practice
Fall 2007

For information about citing these materials or our Terms of Use, visit: http://ocw.mit.edu/terms.
Technical Writing

Eric Adams
Debbie Levey
James Paradis,
Head, MIT Writing Program

1.133 Concepts of Engineering Practice
September 2007
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/tutorial/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)

• 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