CSE/ISE300 Communications S12

• Time: Tue/Thur 5:20-6:40PM
• Location: Room E4315 Melville Library, 4th floor, east wing
• Required Book: The Elements of Style, 4th edition (Sep 1999), by Strunk & White, 978-0205313426, $10 new (or $5 bookstore rental)
• Free Online Webbook: Technical Writing, by David McMurrey
  http://www.prismnet.com/~hcexres/textbook/
• Recommended Text: Pocket Guide to Technical Communication, 5th ed. (2010), by Pfeiffer, 978-0135063965 $43 SBU new, $22 rent; $29 Amazon new
• Instructor: Professor Larry Wittie
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• Email: lw@ic.sunysb.edu
• Office Hours: 4-5pm + 7-7:30pm Tue/Thu or by appointment
• Course Homepage: http://www.cs.sunysb.edu/~lw/teaching/cse300
The first writing assignment, a one-page draft on My Favorite Shoes, was in-class last Thursday 1/26/12. Drafts, not graded yet, will be handed back Thursday 2/2/12. Today, I am handing back a copy of your ungraded draft from Thursday. All deadlines have been shifted later by one class period.

Center the title My Favorite Shoes at the top of a page. Print your name and today’s date on your paper below the title.

List 2 to 4 phrases about ideas for your paper.
Describe your favorite pair of foot coverings. Explain why you like them.
Tell an interesting story about special times when you wore these shoes.

Write a few sentences expanding each of your ideas.

One to 1.3 pages, Margins - 1.25 inch each edge
Medium line lengths – 60 characters per full line
Proper spacing - space & a half for your paper

Bring a typed draft to hand in at the start of class Tuesday 2/7/12. Graded drafts back Thursday 2/9/12. Final paper due Tues 2/14/12.
CSE/ISE 300
First Paper - My Favorite Shoes

Your printed completed paper is due at start of class Tuesday 2/14/12. Center the title, your name, and the date at the top. The paper should be 1.0 page (30+ lines) to 1.3 pages (~40 lines) in length, with lines spaced 1.5 (between single- and double-spaced), text lines at least 6 inches wide, and about 15 words per line. Use font 12 (or larger). The title, your name, the date, and blank lines do not count in the required 30+ lines. Aim for 36 lines of text to be safe.

Email a *doc copy of your paper to lw@ic.sunysb.edu with the Subject: 300 paper 1 - My Favorite Shoes.
Earlier Problems with First Classroom Writing

1. Text not broken into paragraphs
2. Use of contractions (I’m) instead of full phrases (I am).
3. Use of “due to” instead of “because of” in an adverbial phrase.
   
   I was late due to an accident. I was late because of an accident.

   The accident was due to bad weather. (adjective phrase)

4. Misspellings
5. Run-on sentences
6. Sentence fragments
7. Over-capitalization
   
   {feeling faint, chest pains, shortness of breath}

8. Lack of parallelism {need same part of speech for items in a series}
9. Lack of organization - sentences fit together into paragraphs (and sections with section headers, in longer papers).
Technical versus non-technical writing

Technical writing must be useful. It stresses accuracy more than style and has a purpose: transmitting technical information accurately.

Good technical writing is:
1. Technically accurate
2. Useful
3. Concise
4. Complete
5. Clear
6. Consistent
7. Correct in spelling, punctuation, and grammar
8. Targeted
9. Well-organized
10. Interesting
CSE/ISE 300

Blake: Writing Numbers, Measures & Symbols

Rules:
1. Write out all numbers less than 10, except in measures, age, time, dates, page numbers, percentages, money and proportions:
   - nine tractors
   - one trial run
   - five command centers
   - 2 yards
   - 9-second delay
   - 1 pound
   - 6 years old
   - 2 pm
   - October 19, 2004
   - Page 3
   - $3
   - 4 percent
   - 70 to 1 or 70:1
CSE/ISE 300

Blake: Writing Numbers, Measures & Symbols

Rules:

2. When two or more numbers are in the same section, write them as **numerals**, unless all are nine or smaller:
   
   The full-scale system contains 15 pumps, 5 fans, 5 ducts, and 3 heat exchangers. **BUT** The pilot-plant system contains five pumps, one fan, one duct and two heat exchangers.

3. Write **large numbers in the form most familiar to your readers**:
   
   209,000,000 or 209 million or 209 x 10^6 or
   
   two hundred and nine million

   14,968

   2 million instead of 2,000,000

   1.5 billion instead of 1,500,000,000

   5,936,999 instead of 5.936999 million

   $6.7 billion instead of $6,700,000,000

   1,500,000,000,000 or 1.5 x 10^{12} instead of 1.5 trillion
Blake: Writing Numbers, Measures & Symbols

Rules:

4. Place a hyphen between a number and unit of measure *when* they modify a noun, but not when they do not modify a noun.
   - an 8-page report
   - 20,000-volt charge
   - but
   - length of 10 pages

5. Use singular form of unit when there is one or less.
   - 1/2 ton
   - 1 ton
   - 1.5 tons
   - 0.33 centimeter
   - 2.56 centimeters

6. Write decimals and fractions as numerals, not words.
   - 0.78
   - 4/5 or 0.8
   - not zero point seven eight
   - not four-fifths
Rules:

7. Have consistent decimal representations in tables.
   0.76  0.923  0.5  
   2.776  or  2.776  or  2.776
   14.23789  14.23789  14.23789
   127.045  127.045  127.045
   not .76  .923  one half
   if you measured 1.66

8. Do not inflate degree of accuracy by writing too many digits.
   1.66 inch  not 1.667 inch  if you measured 1.66

9. If a number is an approximation, write it out.
   half a cup of coffee
   contains one-third more dog food  if it really is 0.30-0.36
   contains almost one-third more dog food  if it really is 0.27
CSE/ISE 300
Blake: Writing Numbers, Measures & Symbols

Rules:

10. Spell out one of two adjacent numbers - usually the shorter.
   four 3-color ink cartridges
   fifty-seven 3,500-piece puzzles
   Whenever the gauge reaches
   1.5, sixteen switches must be off.
   but
twenty-three 3-phase sockets

11. Do not begin a sentence with a number.
   Two hundred hand-held calculators had arrived by 3pm yesterday.
   or
   By 3pm yesterday, 200 hand-held calculators had arrived.
   but
   not
   200 hand-held calculators had arrived by 3pm yesterday.
Rules:

12. Keep units of measurement consistent, in text and charts.
   Lengths should be all metric (meters, centimeters) or all English
   scale (feet, inches); data, in bits or in bytes (B) but not mixed; and
   time in seconds (s), milliseconds (ms), microseconds (us), or
   nanoseconds (ns).

13. Chose a system of measurements and use its correct units.
   Major choices are mks metric (meters, kilograms or Newtons,
   seconds), cgs metric (centimeters, grams or dynes, seconds) or
   English (feet, slugs or pounds, seconds) for length, mass or force,
   time.
More Rules, Blake: Elements of Technical Writing

How to Write Units of Measure

Rules:

14. Write basic units of measure in word form and derived units in symbols. Use the short words for basic units. Derived units combine several units. They are best expressed as compounds of their short symbols unless the derived unit has a well-known word and special symbol. If so, use the special symbol for the word.

- a 5-second delay
- an 8-pound baby
- 100 meters

The acceleration of gravity at sea level is 32.2 ft/s$^2$, or 9.81 m/s$^2$.

The dam supplies 10 MW of electricity at a frequency of 60 Hz.

- not: 10 megaWatts
- not: 10 million volt-amgs

- not: 60 Hertz
- not: 60 cycles/s

15. Indicate multiplication of unit symbols by a raised dot ($\cdot$), not a times sign ($\times$), and division by a slash ($/$). For unit words, use a hyphen (-) to multiply and the word per to divide.

- Do not drop disks! Decelerations of 322 feet per second squared (10 g) can ruin them. One g is the acceleration at sea level from earth’s gravity, about 32.2 ft/s/s.
How to Write Units of Measure and Equations

Rules:

16. Write secondary units of measure in parentheses after the primary units. The primary units for scientific papers are metric. English units are secondary.
   G is the acceleration from gravity, 9.81 m/s$^2$ (32.2 ft/s$^2$).

17. Use too few rather than too many equations.

18. Center and number equations on a separate line in your text, unless they are short and simple.
   The general first-order linear equation is
   \[
   \frac{dy}{dx} = p(x)y + q(x). \tag{2}
   \]
   Boltzmann’s entropy formula is
   \[
   S = K \log W. \tag{3}
   \]
   OR
   Boltzmann’s entropy formula is \( S = K \log W \).
CSE/ISE 300
How to Write Equations

Rules:

19. Keep all equal (=), multiplication (nothing or × or •), plus (+), and minus (-) signs, and all division(—) lines on the same horizontal level. For a series of equations, vertically align the equal signs.

\[
\begin{align*}
A &= A + \frac{B}{C} - \frac{D - C + 1}{B} \\
x &= x + 1 \\
y &= x + y \\
z &= y + z
\end{align*}
\]

20. Punctuate words introducing an equation like any other words in a sentence. In particular, there is no reason for a colon (:) just before an equation in the text or on a separate line.

Boltzmann’s entropy formula is \( S = K \log W \).

Albert Einstein’s most famous equation is \( E = M C^2 \)

where \( E \) is energy, \( M \) is mass, and \( C \) is the speed of light.
CSE/ISE 300
How to Write Symbols

Rules:

21. Use too few rather than too many symbols.

22. Define each symbol in your text, where you first use it. The definition may follow in parentheses () or within the text. If you use four or more symbols, define all again in a table after your text.

Aqua regia (Latin for “royal water”) is a fuming mixture of one volume of concentrated HNO₃ (nitric acid) with three or four of HCl (hydrochloric acid). Neither acid alone can dissolve gold or platinum (the “royal metals”), but the mixture does readily.
CSE/ISE 300
How to Write Symbols

Rules:

23. Avoid using one symbol for two different meanings in one text.
Write one symbol out fully or find a new symbol for one meaning.
No: Superconducting computers operate at 4 to 5 K. It is hard to
pack even 4 K bits of storage on a cryo-electronic memory chip.
Yes: Superconducting computers operate at 4 to 5 Kelvin. It is
hard to pack even 4 K bits of storage on a cryo-electronic
memory chip.

24. Fit symbols grammatically into sentence structures. Symbols
are substitutes for words and should be treated like words.
A group of \(N\) people on vacation in the seaside town \(A\) decide
to visit friends staying in town \(B\), which is \(N\) km (kilometres)
away along the coast. Some walk the cliff path at a steady \(N\) km
an hour. The rest, one fewer than the walkers, go by car, which
(not counting stops) averages 10 times the speed of the walkers.
The friends in the car stop for \(N\) minutes for fuel, then \(N\) times
as long as that for coffee, and are further delayed for \(N\) minutes
by a flock of sheep. They reach town \(B\) just one minute before the
walkers. The road is much longer than the cliff path.
How long is the road from town \(A\) to town \(B\)? (20 km. \(N\) is \(5\).)
CSE/ISE 300

Punctuation, Grammar, Abbreviation, and Capitalization

Rules:

25. Hyphenate (-) two words that form a compound adjective modifier before a noun, but not a single adjective preceded by a adverb (usually ending in -ly). Compound adjectives are often not hyphenated when they occur after the noun. Do not add hyphens to scientific terms, diseases, or biological names used as modifiers.

   The Cray MTA-2 is a shared-memory multiprocessor. This up-to-date massively parallel computer system is state of the art.
   Scientists were worried that a bird flu epidemic in SE Asia might become a swine flu pandemic, killing humans worldwide in 2007.

26. Hyphenate two nouns used together to name a single thing. When first used in English, two nouns that form the compound name for a new idea are hyphenated to join them. After a few years, the hyphen is dropped to form a single dictionary word.

   rail-road          railroad          data-base         database
   space-craft        spacecraft        sea-level         sea level {sealevel}
CSE/ISE 300
Punctuation

Rules:

27. In a series of three or more terms joined by a single and or or, use a comma after each one except the last. In particular, use a serial comma before the and or or.
   - We teach the 3 Rs: reading, ‘riting, and ‘rithmetic.
   - The qualifier exams cover math, software, and systems.
   - There is nothing big, hot, or dog in the “world’s biggest hotdog”.

28. Omit the period at the end of a sentence within parentheses () within a sentence, but show any exclamation or question mark. If a parenthetical sentence stands alone as a whole sentence, put its final period inside the parentheses.
   - The spike in the middle of Fig. 5.59 (see page 516) is caused by address page misses in the translation lookaside buffer.
   - Tom (or was it Alice?) rebooted the system to fix the problem.
   - Computers were as big as cows when I started computing. (That is a story for another day.) Soon computers will be invisibly tiny.