CSE/ISE300 Communications S13

- Location: Room 2205 Computer Science, 2nd floor, Multimedia Lab
- Time: Tue/Thur 5:30-6:50PM
- Instructor: Professor Larry Wittie
- Office/Lab: Room 1308 Computer Science, 1st floor, Network Lab
- Office Hours: 3:55-5:25pm Tu/Th, if 1308 door is ajar, or by appointment
- Phone: 632-8750 (not 2-8456)
- Email: lw@ic.sunysb.edu or larry.wittie@stonybrook.edu, not both
- Course Homepage: http://www.cs.sunysb.edu/~lw/teaching/cse300

Tu5feb13 Lect03 CSE/ISE300S13 1
The first writing assignment, a one-page outline on My Week With Sandy was in-class last Thursday 1/31/13. TA and my notes on each outline were emailed last evening. Format rules follow for the first printed version of paper 1 due today and the final printed version due next Thursday 2/14/13.

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

Center the title My Week With Sandy at the top of the first page. List your name and last printing date of paper 1 below the title.

See more rules for the final version of paper 1 on the next slide.

Graded paper 1A will be returned Tuesday 2/12/13. Final paper 1 is due Thurs 2/14/13 in printed and emailed forms.
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First Paper – My Week With Sandy

Your printed completed paper is due at start of class Thursday 2/14/13. Center the title at top of page 1 with your name beside the printing date on the second line. Paper 1 must be 1.0 page (30+ lines) to 1.3 pages (~40 lines) of text long, with lines spaced 1.5 (between single- and double-spaced), text lines 6 inches wide, and 12 to 15 words per line. Use font 12. The title, your name, the date, blank lines, and list entries do not count in the required 30+ lines of prose text. Write 36 text lines to be safe. By Thursday 2/14, email a *doc copy of your paper to lw@ic.sunysb.edu with Subject: 300 paper 1 - My Week With Sandy. Bring a printed paper 1 to class.
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  preperations, comming => preparations, coming
5. Poor capitalization  the Hurricane, sandy the hurricane, Sandy
6. Sentence fragments
7. Run-on sentences  {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).
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Rules in Blake: “Elements of Technical Writing”

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
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
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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
eight 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
   - 0.33 centimeter
   - 1.5 tons
   - 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  
   not  .76  .923  one half
   2.776  or  2.776  or  2.776
   14.23789  14.23789  14.23789
   127.045  127.045  127.045

8. Do not inflate degree of accuracy by writing too many digits.
   1.66 inch  not  1.6667 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
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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.

not

200 hand-held calculators had arrived by 3pm yesterday.
How to Write Units of Measure

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/s², or 9.81 m/s².
The dam supplies 10 MW of electricity at a frequency of 60 Hz.

- not: 10 megaWatts
- not: 10 million volt-amps
- 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, \( 9.81 \text{ m/s}^2 \) (32.2 \text{ 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 \( S = K \log W \).
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How to Write Equations

Rules:

19. Keep all equal (=), multiplication (nothing or $\times$ or $\cdot$), 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 $E = MC^2$

where $E$ is energy, $M$ is mass, and $C$ is the speed of light.
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.
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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.)
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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.

<table>
<thead>
<tr>
<th>rail-road</th>
<th>railroad</th>
<th>data-base</th>
<th>database</th>
</tr>
</thead>
<tbody>
<tr>
<td>space-craft</td>
<td>spacecraft</td>
<td>sea-level</td>
<td>sea level</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>{sealevel}</td>
</tr>
</tbody>
</table>
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.