EE/CpE 423
Senior Design
Fall 2014
Class 8 – 10/21/14
Agenda

• Time line
• Web sites
• Presentation schedule
• Engineering ethics
Senior Design Tasks – Fall ‘14

- Identify project
- Form group
- Select advisor
- Develop project proposal
- Publish project proposal
- Develop final design report
- Submit parts list, final design report
- Oral/slide presentations
- Effectiveness surveys
- Weekly status reports

Dates:
- 8/26/14
- 9/9
- 10/1
- 10/14
- 11/1
- 12/1
- 12/2
- 1/1/15

Today: 10/1
Senior Design Web Sites

• Logins on tiger.ece.stevens-tech.edu have been set up and are working
• Login user IDs are of the form 15grpNN where NN is your group number.
• Web addresses are of the form tiger.ece.stevens-tech.edu/14-15/15grpNN
• Web sites will be graded on 11/15 and the 15th of every following month (obviously, no changes are expected from 12/15/14 to 1/15/15, but any that occur are a plus)
Fall Presentations

• This year we will have presentations on November 18, 20 (Thursday) and 25. There are 14 groups, so this means up to 5 presentations per day in a 100-120 minute time period, or a little over 20 minutes per presentation, including time to switch.

• Any group that has not selected a time slot by **Wednesday, October 30** will be randomly assigned a time slot

• **WHEN YOU REQUEST A TIME SLOT, INDICATE AT LEAST THREE PREFERENCES (DAY AND TIME), IN CASE YOUR FIRST CHOICE IS ALREADY TAKEN. IF YOU DO NOT INDICATE ALTERNATE CHOICES, AND YOUR FIRST CHOICE IS TAKEN, YOU GO TO THE BACK OF THE LINE.**

• You can request a block of times (e.g., 3-4:10) and I will pick a time within that that block that is available

• I will try to keep the list of presentations up to date on my web site as requests come in. Refer to that list first when making a request
  
  [http://personal.stevens.edu/~bmcnair/senior_design-14-15/index.htm](http://personal.stevens.edu/~bmcnair/senior_design-14-15/index.htm)

• You should coordinate your choice of a time slot with your advisor so they can be present during your presentation (if I am your advisor, there is no need to coordinate – I’ll be here)
Fall Presentations

• Final presentations have been scheduled and have included all requests

• If you need to make any changes at this point, you will need to swap time slots with another group.

• All presentations must be emailed to me by noon, Monday, November 17 (whether you are presenting on November 18, 20 or 25)

• Emailed presentations **MUST** be in PowerPoint format so I can hyperlink to them from my list of presentations
  
  – **NO PRESENTATIONS WILL BE ACCEPTED THE DAY OF THE PRESENTATIONS**
  
  – **NO PRESENTATIONS WILL BE ACCEPTED ON REMOVABLE MEDIA**
  
  – **ONLY PRESENTATIONS ON MY COMPUTER WILL BE PRESENTED, WE WILL NOT SWAP COMPUTERS DURING THE PRESENTATIONS**
Engineering ethics

• The relevant professional societies for ECE students are
  – The Institute of Electrical and Electronic Engineers
  – The Association for Computing Machinery

• Each has a code of ethics:
  – http://www.ieee.org/about/corporate/governance/p7-8.html
  – http://www.acm.org/about/code-of-ethics
IEEE Code of Ethics (summarized)

1. accept responsibility in making decisions: impacts public safety, health, and welfare; promptly disclose factors that might endanger the public or the environment
2. avoid real or perceived conflicts of interest whenever possible; disclose them to when they do exist
3. be honest and realistic in stating claims or estimates based on available data
4. reject bribery in all its forms
5. improve the understanding of technology, its application, and potential consequences
6. maintain and improve our technical competence; undertake technological tasks for others only if qualified (or after full disclosure of limitations)
7. seek, accept, and offer honest criticism of technical work; acknowledge and correct errors; credit properly the contributions of others
8. treat fairly all persons regardless of such factors as race, religion, gender, disability, age, or national origin
9. avoid injuring others, their property, reputation, or employment by false or malicious action
10. assist colleagues and co-workers in their professional development and to support them in following this code of ethics

http://www.ieee.org/about/corporate/governance/p7-8.html
ACM Code of Ethics (summarized)

1. General Moral Imperatives
   1.1 Contribute to society and human well-being
   1.2 Avoid harm to others
   1.3 Be honest and trustworthy
   1.4 Be fair and take action not to discriminate
   1.5 Honor property rights including copyrights and patent.
   1.6 Give proper credit for intellectual property
   1.7 Respect the privacy of others
   1.8 Honor confidentiality

2. More Specific Professional Responsibilities
   2.1 Strive to achieve the highest quality, effectiveness and dignity in both the process and products of professional work
   2.2 Acquire and maintain professional competence
   2.3 Know and respect existing laws pertaining to professional work
   2.4 Accept and provide appropriate professional review
   2.5 Give comprehensive and thorough evaluations of computer systems and their impacts, including analysis of possible risks
   2.6 Honor contracts, agreements, and assigned responsibilities
   2.7 Improve public understanding of computing and its consequences
   2.8 Access computing and communication resources only when authorized to do so

3. Organizational Leadership Imperatives

4. Compliance with the Code

– http://www.acm.org/about/code-of-ethics
Hypothetical scenario #1

• Your project is behind schedule and your boss is telling you it MUST be completed as soon as possible at all costs

• You find on the Internet that someone has built a module that exactly meets your needs and can be easily modified to solve your problem

• Is it OK to download the design/code and make it part of your project?
Hypothetical scenario #1

- Your project is behind schedule and your boss is telling you it MUST be completed as soon as possible at all costs

- You find on the Internet that someone has built a module that exactly meets your needs and can be easily modified to solve your problem

- Is it OK to download the design/code and make it part of your project?

YES, it is OK under some conditions

NO, it is never OK
Hypothetical scenario #2

• You are writing your internal project final report and need to include details on some of the design (user interface, hardware details, feature set, whatever)

• The vendor from whom you have obtained some of the components/modules/code has a detailed description on their web site

• Is it OK to copy their description verbatim and make it part of your report?

NO  YES
Hypothetical scenario #3

- You are writing a system description to go into a customer user manual and need to include details on some of the design (user interface, hardware details, feature set, whatever)

- The vendor from whom you have obtained some of the components/modules/code has a detailed description on their web site

- Is it OK to copy their description verbatim and make it part of your report?

YES  NO
Hypothetical scenario #4

• You are building an internal prototype to investigate a research problem your company is involved with. The prototype is not the end result, but just a tool to assist in the study.

• You find (on the Internet)(in a reference book)(in a professional journal)(in a PhD thesis) (in Circuit Cellar) that someone has built a module that exactly meets your needs and can be used as-is in your prototype.

• Is it OK to copy the design/code and make it part of your prototype?

NO  YES
Hypothetical scenario #5

• You are writing a paper reporting on your recent research and decide that some of the background explanation for the current paper deals with the same subject matter as a prior paper you have written. You decide to reuse the previous explanation verbatim.

• Is reuse of your own prior material OK?

YES

NO
Hypothetical scenario #6

• You are writing a report that describes results you have obtained in testing a new system you have designed. You have extensive test data of the system performance under a variety of conditions. As you compare the results to a theoretical model, you discover that for one of the test conditions, there is an enormous discrepancy between the results you have and the theory, much worse than you can explain based on expected experimental error. You have test data for a slightly different previous version of the system that agrees with theory, but is too late to go back and repeat the questionable experiments with the current system.

• Do you report on everything but the questionable results?
• Since you know what the theoretical results should be, do you adjust the measured results to match theory?
• Do you include the questionable data but try to explain it away?
• Do you use the older system data instead of the new system data in the report, knowing that it is quite similar?
• Do you make up a complete new set of data to fit what you would have liked to have demonstrated? Consider this

NO

YES
Hypothetical scenario #7

• You work for a major telecommunications company with access to private customer records, including their data and voice network architectures, detailed usage information, and content of their corporate communications (real-time as well as archived information).

• At a conference, one of the customer’s vendors approaches you to get insights about the customer’s operations to better serve them. Do you provide it? What if they take you out to dinner and discuss it informally?

• One of the customer’s competitors approaches you with a similar request and offers to hire you part-time as a consultant. Do you assist them?

• A representative of an unnamed government agency asks you for access to your company’s network to view internal traffic flows. Do you assist them? What if they ask for real-time access to traffic?

• A FBI special agent shows you (but does not give you a copy of) a warrant to monitor the customer’s traffic. What do you do?

YES

NO
Hypothetical scenario #8

• You obtained a copy of (Matlab)(Microsoft Office) from the storage01 server at Stevens, licensed for use on machines belonging to Stevens employees or students.

• Is it OK to copy the software to your PC at home?
• How about your friend’s PC?
• Can you keep using it after you leave Stevens?
• What if it is only for personal use?
• What if you go to work for a company and find you still have it loaded on your computer.
  Is it OK to keep using it for business use?

NO YES