CSC 300
Professional Responsibilities

- Instructor: Clark Savage Turner
- Office: 14-211, Phone: 756 6133
- Office Hours:
  - Monday 12:10 - 2 pm
  - Friday 4:10 - 5 pm
    - and by appointment
- Email: csturner@calpoly.edu
  - don't count on email (or cellphones!)
  - watch for spam filtering (use calpoly accounts)
- Web: www.csc.calpoly.edu/~csturner

Texts (none required)

- **Very Useful:**
  - **Johnson, Computer Ethics**, 3d Ed., Prentice-Hall
  - Petroski, **To Engineer is Human**
  - Yourdon, **Death March**
- Otherwise Recommended:
  - Baase, A Gift of Fire
  - Martin, Schinzinger, Ethics in Engineering
- *Very important to writing* (a critical skill*)
  - Turabian, A Manual for Writers
  - Strunk and White, The Elements of Style

Readings

- Papers linked from schedule page
- Papers you are required to find and read
- Handouts
- All students expected to read assigned work

2 min reports on current computing ethics issues

- Try this:
  - Go to a LUG meeting
  - Read 2600 magazine
  - Read (usenet) comp.risks
  - Peruse Slashdot
  - Read the business section of the newspaper
  - Listen to NPR
  - Bring your own work experience
  - Make friends with local hackers
  - (Go read about the SONY case!)

First Assignment and Reading

- Read SE Code of Ethics
  - Linked from my webpage
  - QUIZ on the code during the second week of classes.
    - You need to read and understand the major topics and the details
    - Be prepared to discuss a few in fine detail
  - Read Weinberg's "Trans-Science" paper thoroughly
  - 4-5 page reaction paper due 5th class
    - ***NOT a summary***, write analysis!
      - critical, supportive or both
      - you may choose a particular angle
        - » ***show me you've read and thought about it***
        - » ***show me your rational reasoning skills***
  - we'll begin discussing "Trans-Science" for 2nd class

Assignment and Reading (cont'd)

- First "2 minute talk" due this week in lab
  - you will have one at minimum
  - your choice of topic - broad based
  - 2 minute limit and no reading from a script

Lab 1 Assignment

- Prepare 1 page "future alumnus" report
  - give me a vision of what you hope to achieve in the 10 years beyond graduation.
    - where will you live?
    - what will you be doing?
    - what will you have achieved?
  - Include a photo at the top
  - due at the end of lab on Monday, week 2

Trans Science Reaction Paper

- **Facts (unbiased**) - what is the article about?
- **Issue** (what issue do you find most important?)
- **Other's Arguments** about the issue (without your comment - as though they were true)
- **Your analysis** (where you analyze others' arguments, synthesize arguments and make new ones of your own)

Format for Reaction Paper

- Use headings
  - Facts, Issues, Arguments, Analysis, Conclusion
- Cite sources when used (**mandatory**!)
  - quotes short, indented, single spaced, citation
  - even cite conversations with colleagues
  - form of citation: [number] in text
    - then numbered list in Bibliography
    - find MLA style - this is what you'll need to learn

Prerequisites

- Prerequisite for this class
  - CSC 206 (or 308?)
    - no exceptions
- Make sure you are on the roll,
  - and you know the drop dates

General Course Themes

- Review course description from catalog
  - Check webpage
- Define terms as we encounter them
  - there is a lot of ambiguity out there
- Spot relationships between technical and social realms
  - ***and communicate clearly about it***

Grading

- Requirements TBD, website for details
- Goals: (How to get an A, B, C, D or F)
  - note that this is not a "product" class, it is a "process" class
  - *to get a high grade, you must consistently:*
    - develop communication skills
      - writing effectiveness (spelling, grammar, clarity and style)
    - develop research skills
    - develop critical thinking
    - look at computing in a situated context
      - a broad view of computing as a human activity

Grading (cont'd)

  - become familiar with Codes of Ethics
  - become familiar with current topics in computing ethics
  - ***participate actively in class (it all happens here)***
- Not necessary (possible) to reach "correctness"
  - must be satisfied with rough methods for ethical analysis
    - compare this with software "formal" correctness
      - do you believe that we can "prove" software correct?

Grading (cont'd)

- Perspective on grades
  - evaluation is part of life
    - but not all of it :-)

Grading-see Webpage for details

- Components to your grade, evaluation of:
  - 20 page research paper
  - formal presentation
  - lab reports and presentations
  - midterm exam
  - final exam
  - quizzes and presentations (new, to be added)
  - class participation can add +/- 10%

CSC 300 Turner Webpage

- Review it in detail
- Full syllabus information is there
- You will be held to all the standards published there
- Approximate schedule will be maintained
- Some detailed grading criteria there
- Once again - attendance/participation critical
  - things will be discussed in class and not on webpage
  - things may be announced in class and not on webpage

Underlying Questions and Definitions

- What is “ethics”
- What are “codes”
- Who *should* care
  - why should anyone care anyway?
- What is an “employee”
- What is a “professional”
- What is a “system” - “emergent behavior?”
- Digital vs. Continuous
- Duty to meet a “contract” or “solve a problem?”

Software / Computing

- What are YOU doing here?
  - Why do we get to do computing?
    - Who pays for this?
    - Who suffers costs / enjoys benefits?
    - Who has “authority” to direct, restrict, guide?
  - What are the issues of consequence?

Ultimate Goals for CSC 300

- You'll know the SE Code of Ethics
  - and how to use it
- Broad general knowledge of issues and opinions in computing ethics
  - familiarity and ability to argue reasonably
- A high quality 20-30 page paper in some area
- A set of CSC 300 lab reports to show ethics experience
  - developed by you in groups

Intro Cases to think about

- Final exam on professor's display
  - you are invited but unobserved
- Internet gambling program flaw
  - illegal to gamble in your state
- Avionics control systems contract
  - impossible to meet software requirements
- Wardriving and mapping to put on web

Thoughts on Analysis of Issues

- Who are the stakeholders?
  - direct and indirect
- What obligations are at stake?
  - legal, ethical, fiduciary...
  - what level of obligation is at stake?
    - professional or employee

Thoughts regarding Case Studies

- How do we proceed?
  - Look at the FACTS (undisputed)
  - Find the ISSUES (what are the questions inherent in the story?)
  - List the STAKEHOLDERS and their interests
  - Look at extant ARGUMENTS (what do other rational people and the stakeholders think about the issues?)

- What is “correctness” here?
  - meet spec?
  - “satisfy” “customer”?
  - capture a “market”?
- must be satisfied with rough methods for ethical analysis
    - ***compare this with software “formal” correctness***
      - See Leveson, Parnas, Hamlet, Knight, Kaner
        - » complete testing absolutely impossible
        - » formal proofs impractical and of limited value
        - » pointers back to “requirements” problem (validation?)

Computer “Science” ??

- Define “science”
  - consider theme central to “The Structure of Scientific Revolution” by Thomas Kuhn
    - natural science
- Sciences of the Artificial
  - “design science”
    - see Herb Simon’s work and others built on it.

Karl Popper's falsifiability criterion (epistemology)

- Any respectable scientific theory must be falsifiable, subject to showing it is untrue
  - "God is love" is not falsifiable
    - not a perjorative criteria
    - there are different ways of "knowing"
  - "The new Cal Poly IP policy explicitly favors 'open source'" is falsifiable
    - so it can be "tested" for its truth objectively
    - just like the rules for Software Requirements

Required Ethical Concepts

- Volunteers to make 10 - 15 minute presentations on the following concepts:
  - Relativism
  - Deontology
  - Utilitarianism
  - Rule Utilitarianism (Act Utilitarianism)
  - Descriptive claims vs. Normative claims
- All students must find definitions and explanations of all the concepts above and be ready to discuss with the volunteer presenter