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 :-)

CSC 300 Spring, 2006
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