

### **Team Term paper requirements**

#### **Big picture:**

Each team will select a topic of interest related to software engineering and conduct research into the topic using academic resources such as conference proceedings and journals. You will present a critical analysis of the topic, not just a survey paper. You are expected to have a thesis about the material and to present the thesis convincingly. Refer to the reading “How to Read a Research Paper.” Magazine articles and Wikipedia-like references are not allowed. A required element of the research is an exploration of the ethical aspects of the chosen topic. There will be several deliverables, culminating with a term paper, an oral presentation to the class and a poster suitable for submission to the SSM spring poster session.

#### **Topic ideas:**

These ideas are presented to stimulate you and to illustrate the range of possibilities for topics. A good general resource is the Software Engineering Institute ([SEI](#)) and the [SWEBOK](#). Propose your own topic – skim the book for other subjects. These topics are available first-come and first-served – there will be no duplications.

1. Development Paradigms
  - a. Agile Methods
  - b. Cleanroom
  - c. CMMI and Team/Personal Software Process
  - d. Rapid Development
  - e. ...
2. Licensure of software engineers
3. Biography and critical analysis of contributions of one or a group of software engineers
  - a. Gang of four
  - b. Dave Parnas
  - c. Nancy Leveson
  - d. ...
4. Safeware
5. Testing
  - a. Test-driven development
  - b. Static analysis techniques
  - c. Component
  - d. ...
6. Software reuse and refactoring
7. Quality management
  - a. Software measurement and metrics
  - b. ...
8. Reverse engineering

## **Deliverables**

### **Overview**

Written deliverables will be in PDF format, except the presentation slides.

Dates are specified on the class website.

Term paper will be at least 5,000 words plus references.

Term paper format will be as specified here:

<http://www.acm.org/sigs/pubs/proceed/template.html>

Oral presentation will be 15-20 minutes in length, with each member speaking for at least five minutes.

### **Deliverable #1: Proposal**

Submit a one to two page proposal of your topic including a preliminary listing of at least five references. These references must be papers and/or journal articles from the ACM, IEEE Computer Society, or similar high-quality sources. Use resources that are available through the library. I will review and accept or ask for revisions. The proposal will include a schedule of work and a schedule of tasks by team member.

### **Deliverable #2: Outline**

Submit an outline of your paper including at least section and sub-section names and also an updated listing of references. Supply a brief summary of each reference.

### **Deliverable #3: Draft paper**

Submit a draft version of your paper. This draft should be at least 3,500 words plus references.

### **Deliverable #4: Final paper proof**

Submit a proof of the final paper. This is your opportunity to receive my comments and suggestions on your final paper along with a tentative grade. You will then have the opportunity to change/improve the paper.

### **Deliverable #5: Final paper**

Submit the final paper.

### **Deliverable #6: Presentation and presentation materials**

Submit your presentation materials before giving your presentation.

### **Deliverable #7: Poster**

Submit a printed poster suitable for SSM poster session.

### **Deliverable #8: Post-Mortem**

Submit a two-page summary and self-evaluation of your team's performance.