Midterm Exam Study Guide

CSC 4700 Software Engineering
February 12, 2004, Dr. Thomas Way

Preparation checklist:

- ✓ Read chapters 1-7
- ✓ Review the lecture slides and notes you took
- ✓ Although much of this material has been covered in class, some has not so these items may require additional preparation effort
- ✓ Make sure you know and understand the following:

1. **Be able to define (words/sentence):**

- alpha testing
- behavioral modeling
- beta testing
- business risks
- CASE
- compatibility requirements
- computer system
- consequential requirements
- context model
- COTS
- data model
- data-flow model
- data-flow or activity model
- deliverables
- domain requirements
- emergent properties
- emergent requirements
- enduring requirements
- ethnography
- feasibility study
- functional requirements
- inheritance model
- milestones
- mutable requirements
- non-functional requirements
- object model
- product risks
- project risks
- RE
- role/action model
- software
- software design specification
- software engineering
- software process
- software process model
- software validation
- stakeholder
- state machine model
- system engineering
- system procurement
- system requirements
- user requirements
- viewpoint-oriented elicitation
- volatile requirements
- workflow model

2. **Be able to briefly example (sentence/paragraph):**

- Contrast software engineering, computer science and system engineering
- State the breakdown of costs of software engineering
- Describe the 4 essential attributes of good software
- Describe the 3 key challenges facing software engineering
- Describe the 4 primary activities of a software process
- Explain areas of professional and ethical responsibility that apply to software engineering

- Describe 3 closely related influences on the overall reliability of a system
- List 6 types of functional system components
- List 4 fundamental activities common to all software processes
- Discuss the importance of CASE tools and provide a few examples
- Describe 3 ways in which software project management is different from other forms of project management (pp. 72-73)
- Discuss risk management when faced with specific risks (e.g., staff turnover, specification delays, poor CASE tools, underestimated development time, etc.)
- Be able to fill in the “Probability” and “Effects” columns of Figure 4.13, including additional “Risk” items not shown
- List 3 types of non-functional requirements (pp. 102-103)
- Discuss problems that can be encountered when preparing user requirements and system requirements
- If provided with the outline of an SRS (Software Requirements Specification), briefly describe the content expected in each section of the document
- Define and discuss the use of scenarios in the requirements engineering process (i.e., what is scenario-based elicitation and how is it used?)
- List 5 checks that should be included for requirements validation (p. 137)
- List 4 techniques that can be used for requirements validation (pp. 137-138)
- Explain the requirements management process, including why it is necessary (pp. 139-140)
- Explain what a CASE workbench is and what it includes (Section 7.5)

3. **Be able to explain the following figures:**
   For example, you will be presented with a figure and asked to explain it thoroughly.
   - **Chapter 2:** 2.6, 2.8
   - **Chapter 3:** 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.11
   - **Chapter 4:** 4.3, 4.4, 4.5, 4.6, 4.7, 4.11
   - **Chapter 5:** none
   - **Chapter 6:** 6.1, 6.2
   - **Chapter 7:** 7.10, 7.11, 7.12, 7.13