Department of Computer Science
College of Engineering, University of Nevada, Reno

CS 425 Software Engineering

Midterm Test

October 27, 2011

Test type: Closed-book examination
Number of questions: 12
Total points: 34
Test weight: 15%
Time: 70 minutes

Notes:

- For questions 1 to 7 indicate the correct answer (only one) on the answer sheets provided by the instructor. Each of the questions 1 to 7 has a one point value for a group total of 7 points.
- Questions 8 to 12 require that you elaborate your answers. You must also write these answers on the sheets provided by the instructor. The total value of questions 8 to 12 is 27 points.

Questions:

1. Which of the following process models is best suited for the development of systems whose requirements are well known?
   a. Reuse-based software engineering  
   b. Incremental development  
   c. Waterfall  
   d. Boehm’s spiral  

2. Which of the following is a principle in the ACM/IEEE-CS Software Engineering Code of Ethics?
   a. Career  
   b. Colleagues  
   c. Advancement  
   d. Market  

3. Which of the following is a not a metric for non-functional requirements?
   a. Mbytes  
   b. Number of UML use cases  
   c. Training time  
   d. Number of target operating systems  

4. Which of the following is a principle or practice in Extreme Programming (XP)?
   a. On-site customer  
   b. Pair programming  
   c. Small releases  
   d. All of the above
5 Which of the following are not shown in class diagrams?
   a. Aggregation relationships
   b. Generalization relationships
   c. Classes
   d. Transitions between classes [1 point]

6 Which of the following diagrams are used for event-driven modeling?
   a. State diagrams
   b. Use case diagrams
   c. Context diagrams
   d. None of the above [1 point]

7 Which of the following architectures (architectural patterns) is best suited for incorporating security requirements?
   a. Client-server architecture
   b. Repository architecture
   c. Layered architecture
   d. Pipe and filter architecture [1 point]

8 Describe the incremental delivery software development process model. Also, indicate its advantages, disadvantages, and applicability. [6 points]

9 Briefly explain what is meant by software prototyping and describe its benefits. [4 points]

10 Explain what is a meant by a user requirement and, respectively, a system requirement. Give an example of a user requirement. Briefly describe three types of notation that can be used to specify system requirements. [6 points]

11 Describe four of the five main principles of agile methods. Indicate how these are mapped (reflected) into the principles or practices of extreme programming. [5 points]

12 Describe the model-view-controller pattern used in architectural design. Also, indicate its advantages, disadvantages, and applicability. [6 points]