CSI 518 Software Engineering
Fall 1999 Midterm Examination
November 2, Tuesday 2:30 - 3:45

Q1: The first Question concern the following Statement of Need: Develop software that tracts courses registration and grades at University at Albany. For each course that a student takes, the information system should be able to retrieve the grade, department name, course number, course name, section number, year taken, semester taken, professor name, and credit hours.
The software should be able to compute the total registration for each section of a course. The software should record the starting time and duration of each offered course so it can detect conflicts in student schedules. The software should also record the name and credit hours for each course listed in the department catalog.

1. (10 pts) Write a testable functional requirement and a testable non-functional requirement for the system.

2. (20 pts) In developing this system, what would be the top priority quality attribute and what would be the most critical risk. How would you resolve such risk and how to achieve this quality requirement?

3. (10 pts) In developing this system, what level of CMM should be appropriate and why? Based on the level of CMM you decide, what's your plan in your development process?

4. Give a high level design of the system based on UML. Your design should include (a) (10 pts) a use case diagram and a sequence diagram (b) (20 pts) the class diagrams (include all the classes in your design) and (c) (10 pts) a state diagram.

Q2: (10 pts) What are the key factors for evaluating the design quality and why?

Q3: (10 pts) About 60% of software failures are caused by incomplete or ' erroneous specifications, explain how a requirement review can reduce the number of this type of failures.