

## CS550: Software Engineering Qualifying Examination

July 2014

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**Part I (60 pts)**

1. Suggest why it is important to make a distinction between developing the user requirements and developing system requirements in the requirements engineering process. (15 pts)

2. When describing a system, explain why you may have to design the system architecture before the requirements specification is complete. (15 pts)

3. What is regression testing? Explain how the use of automated tests and a testing framework such as JUnit simplifies regression testing.(15 pts)

4. Explain why the process of project planning is iterative and why a plan must be continually reviewed during a software project. (15 pts)

**Part II (40 pts)**

5. What is the cost estimation model of COCOMO I (The Basic COCOMO model)? Explain each of the elements of the COCOMO cost estimation metric. What is the difference between COCOMO I and COCOMO II? (20 pts)

6. What are the basic process models? Explain each process model. What are the main strengths and weaknesses of the models? Use a table to compare the process models. (20 pts)