Test 1

**CS425 - Software Engineering**

**January 18, 2015**

**35 Points Total – Write all answers on the separate paper provided.**

1. **Use Case Description** (16pts)

Create a Use Case Description for the following new feature for our library example. For this use case show the basic success flow.

We want to allow library members to renew books that they have checked out. Library members can review the books they have checked out and select those that they want to renew. Books that have a hold on them by another library member cannot be renewed. Also, books that are already overdue cannot be renewed. The standard renewal time is 2 weeks. Books may only be renewed one time.

1. **(6pts) List and give a short example or definition (in one sentence) of 3 Architecture analysis outputs. For each of these outputs indicate if that output will change due to adding this new feature.**
2. **(2 pts) Create a Use Case Diagram for our library example and indicate how it is changed with the addition of this new feature.**
3. **(2pts)What is the purpose of boundary analysis classes? Explain how many boundary analysis classes we will have per use case.**
4. **(4 pts) What is the purpose of entity analysis classes? Give an example of three entity analysis classes that we will need for this library use case.**
5. **(2pts) What is the purpose of control analysis classes? Explain how many control analysis classes we usually have per use case. Explain why that number might vary.**
6. (**3pts) Most faults are introduced in what phases of software engineering? Give a short description of two ways RUP attempts to address problems during this phase.**