# Software Specification & Design

### Topics

* Requirements & Requirements Specification
* Functional Requirements
* Nonfunctional Requirements
* Documenting Requirements - Use Cases, User Stories, SRS
* Domain Modeling
* Design Principles & Design Patterns
* Design of a Web Service API
* UI Specification & Design
* UML Diagrams. At least Class, Sequence, and State Machine diagrams
* Introduction to Java. Java is used in many lab assignments.
* other topics if time permits

### References

1. Craig Larman, *Applying UML and Patterns*, 3rd Ed. This is main text book.

2. Brian McLaughlin, *Head First Object-Oriented Analysis & Design*, O'Reilly. For case studies.

3. Martin Fowler, *UML Distilled*, 3rd Ed., Addison-Wesley, 2004. You can also learn UML online.

4. Rosenberg & Stephens, *Use-Case Driven Object Modeling with UML. Theory and Practice*. A direct and easy to read "cookbook" approach to modeling with use cases.

### Evaluation & Grading

Evaluation is based on

* quizzes and exams
* assignments
* in-class work
* class participation