SE 5550 : SOFTWARE ARCHITECTURE AND DESIGN

Semester Hours:　　　3.0　　　　　　　　　　　　　　　　*Contact Hours:* 3

Coordinator:　　　　　Michael Decker

Text:　　　　　　　　Pattern-Oriented Software Architecture, A System of Patterns: Vol 1

Author(s):　　　　　　FRANK BUSCHMANN

Year:　　　　　　　　2000

SPECIFIC COURSE INFORMATION

Catalog Description:

Principles and concepts of analyzing and designing large software systems. Analysis of software systems. Designing software systems using design patterns and object-oriented techniques. Prerequisite: Grade of C or better in SE 3540 or Admission to MS in Computer Science program. Credit cannot be earned for both SE 4550 and SE 5550. Approved for distance learning.

Course type:　　　　　**ELECTIVE**

SPECIFIC COURSE GOALS

- I can select and use appropriate design patterns.

- I can specify a software system's architecture using UML.

- I can understand separation of concerns and its impact on software design.

- I can architect a software system based on the given requirements.

- I can perform a design review on a software system.

- I can analyze relevant research and communicate my findings.

LIST OF TOPICS COVERED

- Introduction and Importance of Design
- Software Architecture
    - Components and connectors
    - Constraints
    - Composition

- Unified Modeling Language
- Software Design
  - Design reviews
  - Inter-operability
  - Separation of concerns
- Object-oriented Design
  - Design patterns
  - Information hiding
  - Interfaces
  - Inheritance and polymorphism