

CS 6362.501 ---- Software Architecture and Design

Spring 2003

Instructor:	Jing Dong Office: ES 3.208 Phone: 972-883-2187 E-mail: jdong@utdallas.edu
Office Hours:	TR 3:00pm – 4:00pm or by appointment
Lectures:	Time: TR 4:00pm – 5:15pm, Room: ES2.412
TA	TBA
Prerequisites:	CS 6354, CS5V81, or CS5354 Software Engineering
Primary Readings:	<i>Software Architecture: Perspectives on an Emerging Discipline</i> , Mary Shaw and David Garlan, Prentice Hall
References:	<i>Design Patterns: Elements of Reusable Object-Oriented Software</i> , Eric Gamma, Richard Helm, Ralph Johnson and John Vlissides, Addison-Wesley <i>Software Architecture in Practice</i> , L. Bass, P. Clements and R. Kazman, Addison Wesley. <i>Pattern-Oriented Software Architecture: A System of Patterns</i> , F. Buschmann, R. Meunier, H. Rohnert, P. Sommerlad and M. Stal, Wiley. <i>Design Patterns for Object-Oriented Software Development</i> , Wolfgang Pree, Addison-Wesley Longman. <i>Component-Based Software Engineering</i> , Edited by A. W. Brown, IEEE Computer Society. <i>Non-Functional Requirements in Software Engineering</i> , Lawrence Chung, Brian Nixon, Eric Yu and John Mylopoulos, Kluwer Academic Publishing.
Grading Scheme:	Projects (Feb.16, Mar.16, Apr.20): 3 * 10% = 30% Test1 (Mar. 20): 25% Test2 (Apr.29): 45%

Course Objectives and Topics:

The main focus of this course is on the concepts and methodologies for the systematic analysis, development, evolution, and reuse of software architectural design. Common software architectural styles, elements and connectors. Design Patterns. Decomposition and composition of software functionality. Component-based software development. Non-functional requirements. State of the practice and art.

- Introduction to Software Architecture
- Classical module interconnection languages

- Abstract data types
- Modular decomposition issues
- Data flow
- Repositories
- Events
- Client server architecture
- Design patterns
- Other architectural design topics: Process control, DSSAs, System integration, System architecture, Process architecture

Course Project:

The project will be done by teams of 2 or 3 students. (Teams with more than 3 or less than 2 members will not be allowed). 2-member and 3-member groups are treated equally. All students in a team will get the same mark for the work they do unless they unanimously agree (in writing) to an unequal division. You are to choose your own team members. No late projects. An orphan will be assigned to a team by the instructor.

Course Policies:

- The University of Texas System Policy on Academic Honesty (*The Regents and Regulations, Part One, Chapter VI, Section 3, Paragraph 3.22*):

Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another, any act designed to give unfair advantage to a student or the attempt to commit such acts.

The minimum penalty for academic dishonesty is a failing grade (zero) for the project or test.

- It is your responsibility to attend all the classes, to participate in class discussions, understand any announcements, and follow changes to this course syllabus.

Online course material can be access through: <http://www.utdallas.edu/~jdong> and <http://webct.utdallas.edu>.