

CS 5103 - Software Engineering

The University of Texas at San Antonio
Spring Semester 2010

Lecture: Location: **SB 1.02.08** (Science Building - Main Campus)
Time: **Monday/Wednesday: 7:00 PM - 8:15 PM**

Instructor: Macneil Shonle

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Office Hours:

Monday: 3:00PM - 4:00PM

Tuesday: 11:00AM - 12:00NOON

Or by appointment.

Syllabus

An introduction to several aspects of software engineering with an emphasis on methods and tools for developing reliable software-centered systems. We will cover process models, software requirements engineering, architecture design methods, modeling notations, and verification and validation techniques.

Possible discussion topics will include:

- Modularity
- Software Economics
- Software Development Process, including Agile Processes and TDD
- Software Requirements Engineering
- Software Architecture Design
- Design Patterns
- Refactoring
- Software Testing and Verification
- Unified Modeling Language (UML) and Tools
- Project Management, Bug Tracking, Code Reviews
- Aspect-Oriented Programming

There is also a semester-long group project, which will involve developing a substantial application for the Apple iPod touch (to be provided for the duration of the semester).

Course Objectives

This course will provide students an opportunity to...

- Learn how to critically read research papers
- Gain experience using programming environments and software engineering tools
- Understand the fundamental concepts and techniques of software requirements engineering and architecture design
- Learn how to model software systems using UML and other specification notations

Required Texts

The primary textbooks for this course are:

- *Fundamentals of Software Engineering, 2nd Edition.* Carlo Ghezzi, Mehdi Jazayeri, Dino Mandrioli. 2002.
- *The Mythical Man-Month: Essays on Software Engineering, 2nd Edition.* Frederick P. Brooks. 1995.

In addition to these texts, we will read fundamental software engineering papers and papers from emerging areas in the field.

Prerequisites

Students must have CS 4773 - Object-Oriented Systems or have significant software development experience.

Grading

Grading will be based on the weighted average of:

- Class presentations: 10%
- Course participation: 40%
- Assignments: 10%
- Course project: 40%

Note: (a) You are responsible for checking your grades entered into Moodle for accuracy. You will have one week from when the grades are posted to bring any mistakes to the attention of the instructor. (b) Late assignments will not be accepted. (c) There may be opportunities for extra credit.

Course participation will be graded based on how well you can demonstrate your understanding of the readings covered.

Course and University Policy

Class attendance is required to receive credit for participation. Students who are observing a religious holy day or are participating in a University-sanctioned event may be excused, when prior notice is given to the instructor.

This syllabus is provided for informational purposes regarding the anticipated course content and schedule of this course. It is based upon the most recent information available on the date of its issuance and is as accurate and complete as possible. The instructor reserves the right to make any changes deemed necessary and/or appropriate. The instructor will make his or her best efforts to communicate any changes in the syllabus in a timely manner. Students are responsible for being aware of these changes.

University wide policies and services regarding disabilities may be found online at: <http://www.utsa.edu/disability/students.htm>.

You are also responsible for knowing UTSA's policies regarding academic dishonesty. Plagiarism (see Section 203) will not be accepted. If you are in doubt (for example, about using a code sample from a tutorial) be sure to make a proper citation to the author and the source of the code.

The Quality Enhancement Plan (QEP) is a course of action designed to enhance student learning and is a required component of the accreditation process conducted by the Southern Association of Colleges and Schools (SACS). The UTSA QEP Quantitative Scholarship: From Literacy to Mastery provides you with the skills needed to evaluate and interpret data, understand risks and benefits, and make informed decisions in your personal and professional lives. The plan focuses on integrating quantitative reasoning and communication skills in existing courses across the undergraduate curriculum.

The SACS team will visit UTSA during March 23-25, 2010 to review the reaccreditation plan. All UTSA students, faculty, and staff are encouraged to learn more about the QEP by visiting the website www.utsa.edu/qep.

Note: (a) Students are not automatically dropped from a class if they stop attending the class. (b) University policy does not permit visitors in a class. (c) University policy does not permit faculty or office staff to report grades by telephone, fax, or email.

Course URL: <http://moodle.ate.utsa.edu/moodle19/course/view.php?id=90>