Fall 2019
EE379K(16630)/EE382C (16660/16664)
Software Architectures

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Office: EE 7.804
Office Hours: MW 9-10am
Textbook: Software Architecture in Practice by Bass, Clements, Kazman

Course Objective: This course will teach students
·   The importance of system architectures,
·   The different types of system architectures and purposes for these respective types of architectures,
·   Methods for deriving and specifying architecture models, and
·   Methods for analyzing system architecture properties

The course will teach students about system architectures, architectural model specification techniques and analysis techniques offered by the research community as well as those architectures, model specifications and analytical methods commonly used in industry.

Course Evaluation:
Students will be evaluated to determine: (1) their grasp of knowledge concerning the state-of-the-art and state-of-the-practice for system architectural model types, specification methods and analysis techniques and (2) their ability to apply fundamental knowledge about system architecture demonstrating they know when to use a respective system architecture type, how to derive and specify the respective architecture and how to best leverage the architectural model to insure development, testing, maintenance and system evolution efforts remain on target.

Course Schedule:
What is an architecture?
Who are the customers and producers of an architecture?
What are the different types of architectures?
How do you derive an architecture?
How do you specify and communicate an architecture?
How do you judge the quality of the architecture?
Why define an architecture? What utility does an architecture serve?

Course Project
Students will form groups and select the application domain for which they will specify their architectures. Student groups will collectively gather and specify the requirements for their selected application domain. Subsequently, students will work individually to specify the three types of architectures designed to satisfy the collected requirements.

Course Grades

For Undergraduates (EE379K)
- Course Project: 50 % (Product Scope, Product Requirements collected by group; three architectures specified by each individual student)
- Final Exam Presentation 15%
- Comprehensive Exam 30%
- Class Participation: 5%

For Graduate students (EE382C)
- Course Project: 40 % (Product Scope, Product Requirements collected by group; three architectures specified by each individual student)
- Final Exam Report <u>and</u> Presentation 20%
- Comprehensive in-class Exam 25%
- Take Home Final Exam 10%
- Class Participation: 5%

Class Participation:
Attendance is important and directly related to your performance in this class. To emphasize the value, I place on participation, your class participation grade will be comprised of the following:
- Topic Exercises: In class exercises you will complete and submit to Canvas during class. These exercises are intended to "test" concepts presented during the lecture and help you gauge your understanding of those concepts.
- Participation cards: After the first three class days, you should have 5 index cards in your possession with your name printed on the cards. Bring those cards to class. When you ask a question in class (and you should ask questions in class) or when you contribute to the class discussion (and you should contribute to the class discussion), hand me one of your cards. Administrative questions like … "when is the next assignment due?" don't count ☺

Late Policy:
The course late policy follows: Assignments submissions on Canvas are due at midnight on the assigned due date.10% automatic deduction if received within 48 hours after the due date and time (Typically a letter grade deduction). 20% automatic deduction if received after 48 hours and before 4 days following the due date. Assignment submissions will not accepted if received more than 4 days after the due date.

Other University Notices and Policies

University of Texas Honor Code
The core values of The University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the university is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community.

Students with Disabilities:
The University of Texas at Austin provides upon request appropriate academic adjustments for qualified students with disabilities. For more information, contact the Office of the Dean of Students at 471-6259, 471-4241 TDD or the College of Engineering Director of Students with Disabilities at 512.471.4382.

Use of E-mail for Official Correspondence to Students
All students should become familiar with the University's official e-mail student notification policy. It is the student's responsibility to keep the University informed as to changes in his or her e-mail address. Students are

expected to check e-mail on a frequent and regular basis in order to stay current with University-related communications, recognizing that certain communications may be time-critical. It is recommended that e-mail be checked daily, but at a minimum, twice per week. The complete text of this policy and instructions for updating your e-mail address are available at https://it.utexas.edu/policies/university-electronic-mail-student-notification-policy .

Pending Absence:
By UT Austin policy, you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an examination, a work assignment, or a project in order to observe a religious holy day, you will be given an opportunity to complete the missed work within a reasonable time after the absence.

Behavior Concerns Advice Line (BCAL)
If you are worried about someone who is acting differently, you may use the Behavior Concerns Advice Line to discuss by phone your concerns about another individual's behavior. This service is provided through a partnership among the Office of the Dean of Students, the Counseling and Mental Health Center (CMHC), the Employee Assistance Program (EAP), and The University of Texas Police Department (UTPD). Call 512-232-5050 or visit http://www.utexas.edu/safety/bcal.

Emergency Evacuation Policy
Occupants of buildings on the UT Austin campus are required to evacuate and assemble outside when a fire alarm is activated or an announcement is made. Please be aware of the following policies regarding evacuation:

- Familiarize yourself with all exit doors of the classroom and the building. Remember that the nearest exit door may not be the one you used when you entered the building.
- If you require assistance to evacuate, inform me in writing during the first week of class.
- In the event of an evacuation, follow my instructions or those of class instructors.

Do not re-enter a building unless you're given instructions by the Austin Fire Department, the UT Austin Police Department, or the Fire Prevention Services office.