CSE 4316: Computer System Design Project I
Spring 2015

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Office Hours: Tuesday & Thursday 12:00 PM – 1:30 PM, or by appointment

Section Information: CSE 4316-001

Time and Place of Class Meetings: Tuesday & Thursday 11:00 AM – 11:50 AM, ERB 103

Description of Course Content: The purpose of this class is to give you some "close to real world" experience in developing real products, the right way. You'll learn a lot about the development process and discover some interesting things about yourself along the way! This is the CSE capstone course, where you put it all together before you tackle your role in industry after leaving UTA. We will study the product development environment used today in the computer industry, and practice a phased system/software development process, a modified-Waterfall system development life cycle, as applied to computer hardware and software design projects. You will work for two semesters in teams of 4-5 students. In the first course in the sequence, CSE 4316, you will identify your team, your project, start the planning and specification process. Before the first semester is over, you will prepare and present planning and requirements documentation for your design project, and begin architecture/design of your product. The project will be continued and completed, through demonstration of a working prototype, by the same team in CSE 4317, Senior Design II, the following semester.

Student Learning Outcomes: At the conclusion of the course, comprising both CSE 4316 and CSE 4317, the student will have developed the necessary skills to work on a product design and development team by substantially completing a working prototype of a complete product. The skills required to do this include all of the technical skills that should have been assimilated thus far in the student's program of work, as well as soft skills that will be learned and/or honed during the project. The primary objective of this course is the final preparation of the student for entrance into the workplace with the ability to be productive almost immediately.

Additionally, the student will have met the following specific ABET (Accrediting Board for Engineering and Technology) Critical Assessment outcomes:

“Ability to design a system, component, or process to meet desired needs”

This outcome will be evaluated based on your performance on the key deliverables for this course: system requirements document, architectural design specification, detailed design specification, system test plan, and your final product prototype.

“Ability to function on multi-disciplinary teams”

This outcome will be evaluated using peer evaluations and instructor assessments at the end of each semester.

Other ABET outcomes that are very relevant to this class, although not specifically evaluated, are *“Understanding of professional and ethical responsibility”* and *“Ability to communicate effectively”.*

Required Textbooks and Other Course Materials:

Rapid Development by Steve McConnell, Microsoft Press, (available at UTA bookstore)

Standard Engineering Notebook, BookFactory, (available at UTA bookstore and BookFactory.com)

Descriptions of major assignments and examinations: This course requires both individual and team deliverables, as well as a an architectural design gate review (in place of a final examination). Individual team deliverables include weekly status reports, regular entries in the engineering notebook. and other periodic assignments, while team deliverables include gate reviews and supporting project documentation. Assignment due dates and requirements will be announced in class and posted on the course website.

Class Preparation: This class is interaction intensive, meaning that you are expected to participate in class discussion and contribute to the learning experience. Each student is responsible for carefully reviewing all specified lecture/discussion material before each class session and being prepared for class discussion. The majority of readings are from the course textbook. Additional reading may be assigned and class handouts may be distributed, typically via the website, to supplement text readings. Presentation materials to be used for discussion of each topic in class are provided on the class website. Students will receive a grade on their participation in classroom discussions as indicated below. Topics for classroom discussions each week are as indicated on the class website, and will be updated as necessary throughout the semester. Please note that the dates indicated for discussion of a topic are for planning purposes only – the actual discussion dates may vary depending on class learning pace and other factors. Students should come to class prepared to discuss the topic during the week indicated in the reading schedule, or on a later date if deferral is necessary. This is a common occurrence in the work force. Stay flexible!

Attendance: Attendance in class and lab sessions for this class is expected and will be recorded. Since success in life, and especially your job, often begins with simply showing up (on time), and your teammates will depend on you being available as expected every day, class and lab attendance is expected and will be graded as follows:

2 or less unexcused absences	100 points
3-4 unexcused absences	80 points
4 or more unexcused absences	0 points

Notes: Absence may be excused, with appropriate documentation, for illness, critical family emergencies, military service obligations, observance of major religious holidays, etc.

Grading: Final course grades will be computed as follows:

Team Deliverables	30%
Individual Deliverables	30%
Final Exam (Architecture gate review)	30%
Attendance and Participation	10%

For more details on the scoring of individual deliverables and graded course components, please refer to the course website.

In addition to the percentage grade calculated as above, the following other requirements must be met to pass the course, regardless of the percentage grade earned:

(1) Completion of the course in an ethical fashion. Attempting to cheat in any manner whatsoever, falsifying reports, etc. are all violations and will result in failure.

(2) Satisfactory participation as a member of the team for the whole semester. Failure to participate satisfactorily will result in a failing grade. Satisfactory participation includes attendance at team meetings and completion of individual assignments in a timely manner.

(3) Final grades for Senior Design II will be assigned only after a team has completed project wrap-up. Project wrap-up requires, at a minimum: producing a project “read me” file that describes any special instructions and other information that might be required to restart/resume/recover the project from where you leave it; archival of all source code, “make” files, detailed design documents and other “soft” materials, including the aforementioned “read me” on a CD/DVD; and returning the team’s cubicle space and surrounding area in the lab to a clean and “unused” condition such that it can be immediately occupied by another team at the beginning of the next semester. Specific, detailed wrap-up instructions are posted on the class website.

Make-up Exams: Make-up exams will only be allowed under extraordinary circumstances and must be approved by the instructor, who's decision is final. If an exam is missed due to unavoidable circumstances, the instructor must be notified of the situation as soon as possible. Travel will not be considered as a valid excuse for missing an exam, unless for the purpose of representing the university or department. Any exams that are missed due to unexcused reasons will receive an automatic grade of zero.

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. Students will not be automatically dropped for non-attendance. Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (http://wweb.uta.edu/aao/fao/).

Americans with Disabilities Act: The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the *Americans with Disabilities Act (ADA)*. All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.

Title IX: The University of Texas at Arlington is committed to upholding U.S. Federal Law “Title IX” such that no member of the UT Arlington community shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity. For more information, visit www.uta.edu/titleIX.

Academic Integrity: Students enrolled all UT Arlington courses are expected to adhere to the UT Arlington Honor Code:

> *I pledge, on my honor, to uphold UT Arlington’s tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.*
>
> *I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.*

UT Arlington faculty members may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents' Rule* 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University.

Electronic Communication: UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at http://www.uta.edu/oit/cs/email/mavmail.php.

Student Feedback Survey: At the end of each term, students enrolled in classes categorized as "lecture," "seminar," or "laboratory" shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit http://www.uta.edu/sfs.

Final Review Week: A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

Emergency Exit Procedures: Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.

Student Support Services: UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at www.uta.edu/resources.
Course Schedule: An outline of the course schedule and individual topics covered is presented below. As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course.

- Week 1
  - January 20: Getting Organized I
  - January 22: Getting Organized II
  - January 23: LAB: Meet with SD II students

- Week 2
  - January 27: Building a Team I
  - January 29: Building a Team II
  - January 30: LAB: Team Assessment Exercise
- Week 3
  - February 3: Building a Plan
  - February 5: Estimating / Scheduling I
  - February 5: LAB: Team Status Reports
- Week 4
  - February 10: Estimating / Scheduling II
  - February 12: Earned Value I
  - February 13: LAB: Team Status Reports
- Week 5
  - February 17: Earned Value II
  - February 19: Classic Mistakes
  - February 20: LAB: Team Status Reports
- Week 6
  - February 24: Risk Management I
  - February 26: Risk Management II
  - February 27: LAB: ENB Review
- Week 7
  - March 3: Feature Set Control I
  - March 5: Feature Set Control II
  - March 4: LAB: Work Day
- Week 8
  - March 10: Spring Break
  - March 12: Spring Break
  - March 13: Spring Break
- Week 9
  - March 17: Project Recovery I
  - March 19: Project Recovery II
  - March 20: LAB: Team Status Reports
- Week 10
  - March 24: Charter / WBS Review (2)
  - March 26: Charter / WBS Review (2)
  - March 27: LAB: Charter / WBS Review (2)
- Week 11
  - March 31: SRS Gate Review
  - April 2: SRS Gate Review
  - April 3: LAB: SRS Gate Review
- Week 12
  - April 7: SRS Gate Review
  - April 9: SRS Gate Review
  - April 10: LAB: SRS Gate Review
- Week 13
  - April 14: System Architecture I
  - April 16: System Architecture II
  - April 17: LAB: Team Status Reports
- Week 14
  - April 21: System Architecture III
  - April 23: System Architecture IV
  - April 24: LAB: Team Status Reports (Informal), Peer Evaluations

- Week 15
  - April 28: Architectural Gate Review
  - April 30: Architectural Gate Review
  - May 1: LAB: Architectural Gate Review
- Week 16
  - May 5: Architectural Gate Review
  - May 7: Architectural Gate Review
  - May 8: LAB: Attend SD II Final Presentations
- Week 17
  - May 12: Architectural Gate Review

Emergency Phone Numbers: In case of an on-campus emergency, call the UT Arlington Police Department at **817-272-3003** (non-campus phone), **2-3003** (campus phone). You may also dial 911.