

CSE 4316, Section 003 - Fall 2012 - Syllabus

Course: CSE 4316 - Senior Design I

Section information: Lectures: CSE 4316, Section 003. Labs: CSE 4316, Section 004.

Course web page: http://vlm1.uta.edu/%7Eathitsos/courses/cse4316_fall2012

Lecture times: Tuesday and Thursday, 9:30am - 10:20am

Lecture classroom: GS 104 for the first lecture only, ERB 103 for the rest of the semester.

Lab times: Friday, 9:00am - 10:50am

Lab classroom: ERB 103, and occasionally (only when announced specifically) the senior design lab (ERB 208).

Textbook:

Rapid Development, by Steve McConnell.

Required Engineering Notebook:

Standard Engineering Notebook as printed by BookFactory of Redwood Shores, CA.

Instructor:

[Vassilis Athitsos](#)

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Office: ERB 623

Office hours: TuTh 10:30am-12:00pm

Teaching assistant:

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Office: ERB 309

Office hours: TBA.

Course Description

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 the real world. We will study the product development environment used today in the computer industry, and practice a phased system/software development process, often called the 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, and start the planning 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:

(c) 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.

(d) 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:

- (f) Understanding of professional and ethical responsibility
- (g) Ability to communicate effectively

ABET Critical Assessments and their effect on grades:

As indicated above, Senior Design is used to measure your performance against two of the ABET Outcomes for your particular program (CS, CpE or SwEng). The evaluation of your performance as measured against these outcomes is a simple Pass/Fail. Please note that you must achieve a Pass grade on each of the outcomes in each semester. If you fail, or do not complete, any individual outcome you will fail the course regardless of your performance in other areas. Additionally, several graded class exercises and/or assignments will be used to evaluate these outcomes. These assignments are scored as individual or team deliverables as discussed below and in class lecture notes.

Prerequisites:

All students are expected to have passed the courses *Fundamentals of Software Engineering* (CSE 3310), *Operating Systems* (CSE 3320), *Embedded Computer Systems* (CSE 3442), *Economics for Engineers* (IE 3312), and *Professional and Technical Communication* (SPCH 3302).

Course Materials:

Additional course materials such as lecture notes, assignments, and solutions will be available electronically on the course web page. Changes and corrections, if any, will also be announced by e-mail.

Descriptions of major assignments and examinations:

There will be a final exam at the end of the semester. There will also be assignments due on a regular basis, as well as individual and team progress reports.

Attendance:

Attendance in class and lab sessions for this class is expected. 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 graded as below:

- 2 or less unexcused absences 100
- 3-4 unexcused absences 80
- More than 4 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, and certain university service commitments. If you are not in the classroom when the lecture/lab session begins, you will be counted as late. Each late appearance counts as one-half of an unexcused absence in the formula above, so showing up late is better than not showing up at all. If you are excessively late, i.e. you miss a significant portion of the class session, you will be counted as absent.

Class Participation:

You are expected to actively participate in class discussions, scheduled product reviews, peer presentations, and any classroom exercises. Evaluation of class participation is based on your individual contributions, via active participation, to the class throughout the term. Your participation will be recorded in class, as participation opportunities are made available, for the entire term. Your participation will be evaluated at the end of the term as follows:

- 100% Regular (almost daily) participation, almost always asks good questions and answers questions well
- 90% Frequent participation, but does not ask questions or answer questions on a regular basis
- 80% Average participation, and questions and answers do not reflect adequate preparation
- 70% Infrequent participation, and answers reflect inadequate preparation
- 0% Rare participation, with little or no evidence of preparation

Grading:

Grading is based on the following absolute scale. To achieve a grade, you must achieve the required number of points in the course. Varying numbers of points are awarded for each individual and team assignment/deliverable. Remember: 900 points means 900, not 899.

There will be no bonus points or extra credit assignments.

- A: 90% + other requirements (see below)
- B: 80% + other requirements (see below)
- C: 70% + other requirements (see below)
- D: Not given in Senior Design. Attaining a grade of less than 70% is failure of one or more departmental and/or ABET outcomes.
- F: below 70%, OR one or more other requirements (see below) not met.

Please remember: to make an A, you must perform consistently well. Failing to complete a single assignment well can make a grade level difference! 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.

The grade will be computed based on the following components and weights:

Final Exam	30%	The exam will be administered at the end of the semester, following the official schedule of final exams.
Team Deliverables	30%	The grade on team deliverables is based on the ability of the team to deliver specified deliverables with good quality on time. If multiple reviews of the deliverable are required, the grade on the deliverable will be lowered one grade level for each additional review. In general, a document that passes review the first time will be given a grade of 90-100, depending on the number of changes required; passing on the second review will receive a grade from 80-89; etc. The overall team grade is based on the deliverable grades and the team's overall productivity. Performance on weekly team status reviews and all other assigned team deliverables will also be used as components of this grade.
Individual Deliverables	30%	All other individual assignments made throughout the semester will be used in the calculation of this grade. These include homework assignments, individual status reports, class exercises, individual exercises in class, and others as necessary. Individual Engineering Notebooks will be evaluated on an intermittent, unannounced basis and used as a component of this grade. Additionally, individual performance on your team project is determined based on the value that an individual contributes toward project deliverables by use of the concept of "earned value." By nature of the tasks in Senior Design I this calculation will be somewhat more subjective than for Senior Design II. The details of this are explained in one of the early lectures in Senior Design I. Individual earned value will be calculated on a weekly basis and reported in the individual's status report.
Attendance and Participation	10%	Attendance at all team meetings is part of this grade, as is class and lab attendance. Participation is an event-based score assessed by the instructor, when opportunities to join in class discussions, comment on peer reviews, etc. are available to the class as a whole. In other words, you are expected to attend all Senior Design classes and team events and actively participate in them. Note also that attendance and participation penalties (deductions) may be assessed for missing critical in-class exercises (e.g., design exercises, ethics exercises, reviews, etc.).

Students are expected to keep track of their performance throughout the semester and seek guidance from available sources (including the instructor) if their performance drops below satisfactory levels.

Course Sequence and Withdrawals:

A student must successfully complete (i.e., pass with a C or better) both Senior Design I and Senior Design II in two sequential semesters (i.e., same project, same team). Any student who fails to successfully complete, or withdraws from either Senior Design I or Senior Design II for any reason must restart the sequence with Senior Design I.

The university withdrawal policy will be strictly adhered to. Up to the initial withdrawal date, all

students will receive a W. After that date, the grade will be determined by the student's current average, and a WF or WP assigned as appropriate. Note, as stated above, that withdrawal from CSE 4317 Senior Design 2 will necessitate repeat of Senior Design 1 as well as Senior Design 2.

Expectations for Out-of-Class Study:

Beyond the time required to attend each class meeting, students enrolled in this course should expect to spend at least an additional 12 hours per week of their own time in course-related activities, including reading required materials, completing assignments, preparing presentations and reports, and overall working on their team project.

Make-up Exams:

Make-up exams will be offered only in cases of well-documented (in writing) medical or otherwise critical emergencies, in strict adherence with official UTA policy.

University Policies and Services

Grade Grievances:

Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current undergraduate catalog.

Drop Policy:

The standard UTA drop policy applies to this course. 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/ses/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.

Academic Integrity:

All students enrolled in this course 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.

Instructors 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, paragraph 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.

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.

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 a 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:

One assignment will be due in the Final Review Week. This is in accordance to the UTA policy stated below.

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.