CSC131 Computer Software Engr - SECTION 06

Fall 2019 - CSC 131: Computer Software Engineering

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Office Hours: Friday 12:30PM – 3PM
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Course Description: Principles of Software Engineering covering the software development life cycle, including software requirements engineering (elicitation, modeling, analysis and specification), software design, software implementation and testing. Main topics include various software development process models, method and techniques for specifying requirements, architectural and detailed design specification, prototyping, top-down and bottom-up software implementation and testing. Topics also include project management, project documentation and the development of communication skills through written documentation and oral presentation. Prerequisite: CSC130; may be taken concurrently.

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Piazza Access Code: Register yourself for this class on Piazza (Links to an external site.)using access code: CSC13106FA19DP29

Textbook(s): **Note: The book listed in the bookstore is incorrect, please do not buy it!**

1. Object-Oriented Software Engineering Timothy C. Lethbridge, Robert Laganiere
   https://www.amazon.com/Object-Oriented-Software-Engineering-Practical-Development/dp/0077109082 (Links to an external site.)

   This is the primary text for this course. We will use the free text below to fill in some gaps.

2. Software Engineering, I. Marsic, 2012, Rutgers University
   This is a free book that is available in pdf at the following address: http://www.ece.rutgers.edu/~marsic/books/SE/book-SE_marsic.pdf (Links to an external site.).

3. Learning Java by Building Android Games
   https://www.amazon.com/Learning-Java-Building-Android-Games/dp/1788839153 (Links to an external site.)

   This is an optional textbook. If you are a transfer student and new to Java then you may find this helpful. This book will provide the basic Android background needed to get started with the projects in this course. There are many sources of information for Android online, so the choice is yours. This book can also be purchased in pdf file from from the publisher's website. (Links to an external site.)

Handouts, lecture notes, papers and other reading materials will be assigned.

Special Requirements: All students are required to have accounts at GitHub and Trello that they are willing to use for the course project. Details will be discussed in class.

Course Goals: The goals of the course are to:

- Enable a student to understand the main characteristics of software
- Introduce the concept of a software development life cycle and examine some popular life-cycle models

- Discuss user roles in software development process
- Describe the main technical activities associated with software engineering: requirements elicitation, modeling, analysis and specification, architectural and detailed design specification, implementation, testing and maintenance
- Teach a student a variety of techniques associated with the main activities of software engineering and provide practice in their use
- Explain the key characteristics of different kinds of software system -for example, real-time, database-oriented, distributed, knowledge-based and safety-critical systems -and discuss the implications of these characteristics on the selection of development techniques
- Provide sufficient knowledge for a student to be able to choose development techniques, tools and life-cycle models for a given project
- Give students an understanding of the importance of quality assurance, human factors, professional issues and project management in software development
- Give students an understanding of the importance of user involvement throughout the development process.
- Demonstrate the need for and practice of effective communication skills, both oral and written.

Major Topics Covered:

- Software development process models
- Software system engineering
- Requirement engineering
- Object-Oriented analysis
- Design (design and design documentation)
- Object-Oriented design
- UML
- Coding and integration
- Software testing and maintenance
- Project planning
- Project management
- Current issues and trends

Course Grading Breakdown:

Midterm	20%	Monday Oct 7, 2019
Final	20%	TBD
Homework, Quizzes, Projects, and Problem Sets	60%	

CSC-131 Project: You will be required to work in groups for the class project. Details of the project and team structure will be discussed in class.

CSC-131 Paper Policy: Engineering paper is not required for CSC131 as there are few to no paper submissions in this course. Some in class exercises may require you to submit a sheet of paper. Plain white copy paper or lined paper is fine. No paper from spiral notebooks will be accepted. Don't test this, I don't want to see your sad face when I hand it right back to you!

General Policies: The following policies apply to all classes that I teach. If there is any discrepancy between the general polices below and the specific class policies above, the specific policies take precedence.

Attendance policy: All students are expected to attend every class; technically, attendance is required and you may be dropped from the course for failure to attend class prior to census. However, I will not generally take daily attendance and there is no grading penalty other than you

are 100% responsible for all material and announcements presented in all classes. Be aware, however, that I will take attendence from time to time and if you have too many unexcused absences then you may still fail the class for failure to attend. Unexcused absences from midterm or final exams, quizzes, or in class exercises will result in zero grades. In class exercises and quizzes can happen at any time and will not be announced in advance. I adhere to the strictest interpretation of "unexcused" in the university policy (Links to an external site.) and require and verify all documentation for such absences.

Canvas: Handouts, homework assignments will be available on canvas. See the sections on Homework and Submission Requirements for more detail. I will do my best to keep Canvas updated with your progress. In case of conflict between what canvas reports and what is stated in this syllabus, the syllabus takes precedence.

zyBooks: If this class uses a zyBook then some online homework will be submitted on the zyBook web site. (Links to an external site.)

Other Online Communication: I have found that Piazza (Links to an external site.) provides a more effective discussion forum than Canvas and we will be using that for discussion for this course. You are required to setup a Piazza (Links to an external site.) account for this course if you do not already have one. The Piazza (Links to an external site.) invite code will provided above and/or in class. With respect to questions about course mechanics, homework, etc., unless a question is personal in nature, you are required to first post your question inPiazza (Links to an external site.) before sending your instructor an email.

Privacy: All student submissions must have your name and the last four of your student ID. Do not put your *full* student ID on anything that you submit! To maintain the privacy of your educational record, you may, at your option, establish an alternative four-digit number that you should keep private and use for all identification purposes on all exams and submissions. If you forget your code, you may come to your office and recover it. This is optional, most students use the last four of their student ID.

Homework: Homework will generally be assigned weekly and all homework will be submitted online. Homework submitted on canvas may be graded for correctness, or simply participation, at the instructor's discretion. If graded for correctness the *triage grading* (see below) method will be used. Failure to submit homework can have a dramatic impact on your grade. Always submit whatever homework that you have completed at the submission deadline. Additionally, since most homework graded for correcteness is triage graded, you should not expect to use the homework process as a mechanism for low level feedback on your understanding of the material. You may receive some high level feedback on canvas, however, if you need specific help with problems then you are *expected* to attend office hours where we can go over the fine details of any particular problem.

Projects and Problem Sets: Some homework may be given as a project or as a problem set. Projects are typically programming projects for most CS classes. Submission will be online and defined at the time of assignment. Problem sets can be viewed as akin to a take home exam and typically involve fewer but more challenging problems. Unless otherwise specified, you are expected to work alone on projects and problem sets. If assigned, projects and problem sets will be counted in the homework portion of your final grade.

Quizzes: Quizzes may be given and they may or may not be announced. No books or calculators are allowed during quizzes unless otherwise notified. If a Scantron sheet is ever needed for a quiz, you will be told ahead of time. If given, quizzes will be counted in the homework portion of your final grade. You should always have engineering paper available to take in-class quizzes. Some quizzes

may be online quizzes. You may be required to use the lock-down browser and it will be your responsibility to make sure that it works on whatever system you choose to use to take the quiz.

Exams: There will be one or two midterm exams and a comprehensive final. No books or calculators are allowed during exams unless otherwise notified. **Scantron sheets are always required for exams**! I do not keep them and cannot provide them. If you do not have a Scantron sheet on the day of the exam you will not be allowed to take the exam.

Makeup Exams: No makeup exams will be given.

Academic Integrity: *Unless otherwise stated on an assignment*, you are expected to solve the homework on your own using whatever resources, except for other students, that you need to help you understand the problems. *No copying is allowed, from any source.* For each homework assignment, please list any sources of help (e.g., other texts, web sites). Failure to do so may be considered plagiarism. In practice, grades have a tendency to be strongly related to a student's willingness to complete work on their own, the more work that you complete on your own, the better your grade will likely be. The turnitin integration provided with Canvas may be used for your homework submissions.

Late Work: No late work will be accepted. Deadlines are firm and no work will be accepted after the final submission acceptance deadline. However, all submissions will have a late grace period that will vary between one and twenty four hours. During this period your grade will be automatically reduced by three percent per hour. It will not be possible to submit an assignment after the grace period. The grace period is only guaranteed to be at least one hour. Canvas rounds up, so an assignment that is one second late will be penalized three percent. I will not change this, don't ask. All work must be submitted on canvas and there are no exceptions to this policy whatsoever. **No work other than in class exams will be accepted on paper and no work will be accepted by email.**

Given this, it behooves you to make sure that you have plenty of time to submit up to the submission deadline. I suggest that you submit at least an hour prior to the deadline. A better policy would be to submit a day early. This will allow you plenty of time to accommodate any submission difficulty. After the deadline, canvas will not allow you to submit your assignment. It is 100% your responsibility to make sure that your submission technology works. No exception to this policy will be granted for technology failure that cannot be verified. No effort will be made on my part to validate technology failure that is not university wide in nature. In the past some students have submitted and then failed to verify that their submission was successful. It is 100% your responsibility to verify your submission.

Class Participation: All students are expected to make a regular contribution to the class. You should be prepared to offer your comments regarding material presented, ask interesting questions during class, and respond with good answers to questions asked in class.

Extra Credit: There will be no opportunities for extra credit in this course.

Submission Requirements: All handwritten homework submissions should be neatly written and the work and solution should be clearly identified. All submissions must be on Engineering Paper: this is the green quadrille ruled paper available in the bookstore. *No other types of paper are acceptable*. Note: even though the homework is now submitted online, this requirement still stands. Standard lined paper tends to be challenging to read.

Neatness counts! Please note that I will not put excessive effort into reading sloppy handwriting. This holds for both homework and exams. Unreadable portions of a solution are equivalent to those portions not being present and you will be graded accordingly.

For each problem, you must include the section and problem number from the text and you must write the problem as stated in the text. It is not necessary to rewrite large sections of historical or explanatory text. The essence of this requirement is that your homework is a complete document that you are able to study from and that can be read independently of the textbook.

You must scan your handwritten homework assignments and submit them as a *single* PDF file. The university has scanners for you to use if you do not have access to one. If your scan software creates multiple files then you must combine them into a single PDF file and upload only one file. Unless otherwise specified in the assignment, only the 1st submitted file for each assignment will be graded. **Camera images are not acceptable scans.**

For non-handwritten assignments, e.g., code, each assignment will have its own **additional** submission requirements.

Failure to adhere to the requirements in this section will result in a reduced grade.

Grading: There are two forms of grading that will be used in this class. Probabilistic questions, e.g., multiple choice, true false, will use *Certainty Based Marking* (Links to an external site.), or CBM. CBM will require you to assert how certain you are that each answer is correct. We will discuss this in class in more detail. All other assessments will used *Triage Grading* (Links to an external site.) . This method may be applied to more than one element of an assignment. Again, we will discuss this in class in more detail.
While I do generally curve grades at the exam level , the decision to do so is a function of the distribution of scores. Moreover, the level of curve is not guaranteed to be identical from one exam to the next or even one section to the next. Each curve is determined from the data. If I do curve, you can be confident that your relative standing for that exam grade will not change as a function of the curve. That is, if you have the top raw grade then your curved grade will be the top curved grade. Further, your curved grade will never be lower than your raw grade. I do not use the Bell Curve method. Most commonly I use the root method as described by David Richeson (Links to an external site.), however, again, the method and degree of curve is completely within my purview and may change at any time.
Drops Policy: Drops are handled in strict accordance with university policy. (Links to an external site.) Note: If a note from a doctor or supervisor is required, it is not within my purview to evaluate whether or not your letter or reason qualifies as per university policy. You must take your documentation to Student Health and Counseling Services and obtain a letter from them stating that they support your reasons for dropping. See the section below for detailed contact information.

Do not send me an email with details about your situation. I do not need to know the details and I want you to maintain your privacy. The only thing that I need from you along with your drop form is a letter from counseling services.

Counseling and Psychological Services: The college of engineering provides a counselor, Dr. Richard C. Zamora, who is with Student Health and Counseling Services. His phone number is 916-278-7294 and his email is richard.zamora@csus.edu. Additional assistance may be available at Student Health and Counseling Services.

Basic Needs Support: If you are experiencing challenges in the area of food and/or stable housing, help is just a click, email or phone call away! Sacramento State offers basic needs support for students who are experiencing challenges in these areas. Please visit the university's Basic Needs website (Links to an external site.) to learn more about your options and resources available.