Foundations of Software Engineering
Course Outline

Course Description:
The course will cover the software engineering concepts, principles, methods, techniques, and practices. Students will learn and practice modern software development processes and activities, including requirements modeling, design, implementation, testing, deployment, and management for delivering quality software.

Student Learning Goals: Students will be able to:

- Understand and apply important software engineering concepts, principles, methods, and techniques;
- *Understand and apply modern software development processes and methodologies covering requirements modeling, software design, software architecture, implementation, testing, and deployment, plus continuous integration, continuous deployment (CI/CD) practices, and the use of toolchains;*
- *Work with team members to complete a software development project;*
- Understand other important software engineering methods and activities such as configuration management, project management, quality control and assurance, and software process improvement.

Prerequisite: CPSC 131 (Data Structures)

Instructor: Christopher Ryu, Ph.D.
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Email: tryu@fullerton.edu

Office Hours: Mon and Wed 3:40 pm - 4:40 pm or by appointment

Textbook and lecture notes

- PPT slides, supplemental materials
- Reference book (not required): Roger S. Pressman, Software Engineering: A Practitioner's Approach, 7th Edition, McGraw-Hill Higher Education, 2010

Administrative drops
Any student who misses the first- and second-class meetings may be dropped from the class unless they contact the instructor or the Computer Science department within 24 hours.

Drop policy
The university policy "stipulates that authorization to withdraw after the second week and prior to the last three weeks of instruction shall be granted for only the most serious reasons. A serious reason is defined as a physical, medical, emotional, or other condition that has the effect of limiting the student's full participation in the class…. The reason must be documented by the student…." The new University Policy also states specifically that "poor academic performance is NOT evidence of a serious reason for withdrawal."

Communication

You have a CSUF-supplied email account, and that is the only way I have of reaching you outside class. Check your email and course page daily for important class announcements and individual messages. I try to respond to emails within two working days but occasionally may take longer than that.

Attendance and class participation

You are expected to attend all lectures and participate in the discussion, including possible online discussion(s), if any. Regular attendance is essential to do well in this course. You are responsible for missed lecture materials.

If an online discussion topic is posted, you have to post ***at least one entry*** for each question/topic posted ***within the specified time period*** to give other students opportunities to read your entry, not at the end of the semester. *Trivial posting* doesn't count. For example, saying "I agree with John" is not a contribution but an example of trivial posting; you should give your own opinion, which may extend or even disagree with a classmate's.

Group project and assignments

There will be one group project and several assignments that are designed to check the progress of the project or to assess individual work. The detailed information about the project will be announced later. Late submission of the project may be accepted with at least 10% deduction plus at least 1% further deduction for each day you are late.

Third-party work (code, artwork, reports, articles, etc.) may not be used in student work without prior instructor consent. Failure to gain and document instructor consent will be construed as willful academic dishonesty. When a third party's work is incorporated into student work after acquiring instructor consent, failure to wholly document the work's origin, copyright and license will be construed as willful academic dishonesty.

Examinations

There may be several short quizzes to measure the individual performance. All examinations will be **closed book and notes**. The detailed information and schedule for tests will be announced later.

Makeup policy: If you are absent from a test and have a valid excuse such as an illness, a death in your family, or another equally compelling reason, the weight of your test score will be increased by the weight of the overall score. Without a valid excuse, you will receive a zero score for the test.

*All the scores from assignments, projects, and tests will be posted on the class page of the learning management system. You are responsible for checking your score. Let me know as soon as possible (**BEFORE the final grade is submitted to the University**) if you find any discrepancies in your scores. I strongly recommend that you keep all your records of your work with the timestamp until you receive your final grade.

Grading Policy

Your grade will be determined by several of your activities, as shown below.

Grade categories	*Weights*
Class participation	5%
Assignments and project	70%
Quizzes	25%
Total	100%

* The final grade is computed by weighted sum, $\sum w_i x_i$, where w_i is the weight shown in the above table and x_i is your score on the basis of the 100 percentile.

Letter grades will be assigned as follows (>= indicates the range minimum):
A: 92% A-: >= 90%
B+: >= 87% B: >= 82% B-: >= 80%
C+: >= 77% C: >= 70%
D+: >= 67% D: >= 60%

* Grades may be assigned by considering your performance relative to the class's performance (curve), especially when the class average is low. However, no one will be penalized if the class as a whole does excellent work. If there is any extra or bonus work, the weight of the extra work will be no more than 5% of the overall score. After the last day of class, no extra work will be given to raise your score or grade.

* The grade is strictly based on the quality of the work that shows the level of your understanding and application ability, not based on the "hard work component."

Academic Dishonesty:

Academic dishonesty, such as **plagiarism** or **cheating**, **will result in a grade of F** in this course. Repeat offenses may have more severe consequences, up to and including expulsion from the University.
The following is taken from the University Rules (UPS 300,021):

> "***Academic dishonesty*** includes such things as cheating, inventing false information or citations, plagiarism, and helping someone else commit an act of academic dishonesty. It usually involves an attempt by a student to show possession of a level of knowledge or skill which he/she in fact does not possess."
> "***Cheating*** is defined as the act of obtaining or attempting to obtain credit for work by the use of any dishonest, deceptive, fraudulent, or unauthorized means. Examples of cheating include, but are not limited to, the following: using notes or aids or the help of other students on tests and examinations in ways other than those expressly permitted by the instructor, plagiarism as defined below, tampering with the grading procedures, and collaborating with others on any assignment where such collaboration is expressly forbidden by an instructor. Violation of this prohibition of collaboration shall be deemed an offense for the person or persons collaborating on the work, in addition to the person submitting the work."
> "***Plagiarism*** is defined as the act of taking work of another and offering it as one's own without giving credit to that source. When sources are used in a paper, acknowledgment of the original author or source must be made through appropriate references and, if directly quoted, quotation marks or indentations must be used."

Classroom Environment
You have the right to expect a classroom that is free from distractions and where everyone is treated respectfully. You also have a responsibility to contribute to that environment. Although I strongly encourage you to participate in classroom discussions, disruptive activities are not appropriate and not allowed.

Technical Support
In case of technical problems with the learning management system or email, please contact the help desk at helpdesk@fullerton.edu or (657) 278-8888.

Disabled Student Services
The University requires students with disabilities to register with the Office of Disabled Student Services (DSS) within the first week of classes. The office of Disability Support Services' website is http://www.fullerton.edu/DSS/. They can be reached by phone at (657) 278-3117 or TDD at 657-278-2786. Their email address is dsservices@fullerton.edu. Their office is located in University Hall, room 101. Students requesting accommodations should inform the instructor during the first week of classes about any disability or special needs that may require specific arrangements/accommodations related to attending class sessions, completing course assignments, writing papers or quizzes/tests/examinations."

Emergency Policy (earthquakes, fire, etc.)
For your own safety and the safety of others, each student is expected to read and understand the guidelines published at « http://prepare.fullerton.edu/campuspreparedness/ ». Should an emergency occur, follow the instructions given to you by faculty, staff, and public safety officials. An emergency information recording is available by calling the Campus Operation and Emergency Closure line at 657-278-4444.

Tentative Lecture Schedule
A tentative schedule ("**subject to change**") for this class is shown below.

Lecture weeks	***Topics*** *(Discussion of some topics will be* ***iterative****)*
1	An overview of software engineering, OO programming, TDD, software process, agile process, CI/CD toolchains
1-2	Requirements analysis and modeling, software design
3-5	Software design principles, patterns, and architecture
5	Software testing, quality control and management, project management, process improvement
	Last day of class: August 4 (Thursday)