CALIFORNIA STATE UNIVERSITY
FULLERTON

**Course Syllabus for CPSC 362.09/10: Foundations of Software Engineering (Spring 2023)**
**Department of Computer Science, College of Engineering and Computer Science**

| Course | Place | Time | Final Examination |
|---|---|---|---|
| CPSC 362.09 | CS 101/zoom | Monday-Wednesday, 8:00 pm-9:50 pm | Monday, **May 15**, 2023 |
| CPSC 362.10 | CS 101/zoom | Monday-Wednesday, 8:00 pm-9:50 pm | Monday, **May 15**, 2023 |

**INSTRUCTOR:** Dhruti Dilipbhai Patel

**E-MAIL:** dhrpatel@fullerton.edu

**MESSAGE/PHONE:** (559) 770-2560 **(Call, If urgent)**

If you have any problems with this course, please do not hesitate to contact me as soon as possible. I want the entire class to do well and for that I am willing to help as much as possible.

**ZOOM LECTURES**: Mondays & Wednesdays: 8:00 pm-9:50 pm
https://fullerton.zoom.us/j/87688399742

**OFFICE HOURS**: Tuesday: 4:00 pm-5:00 pm on Zoom: https://fullerton.zoom.us/j/84445347670

**STUDENT TECHNICAL SUPPORT: (657) 278-8888**

**IMPORTANT DATES:** CSUF's Academic Calendar is posted online here and contains all the campus closures and holidays you should be aware of.

CSUF's Admissions Calendar is posted online here and contains all the major dates with respect to adding, dropping, and withdrawing from your classes.

**HOLIDAYS:** Monday, February 20 (Presidents' Day); The week of March 27 - April 2 (Spring recess)

**RESPONSE TIME:** The instructor responds to email questions, phone calls, and online assignments usually within 48 hours except on weekends and holidays.

**SYNCHRONOUS/ASYNCHRONOUS INSTRUCTION:** Students may view lecture videos asynchronously, but in-person or synchronous attendance is strongly recommended since interactive material will be presented. Tests are synchronous unless previously arranged. Labs require synchronous participation unless previously arranged. **Unexcused absence(s) from the lab will impact the collaboration aspect of your group project grade.**

**TECHNICAL REQUIREMENTS:**

Students must have:

- Bring a laptop to attended in-person class sessions (unless hardship prohibits - please let me know)
- Have access to a computer with camera, microphone, and speakers that supports Zoom
- Have sufficient network access to support Zoom
- Utilize the learning management system (LMS) Titanium/Canvas, to access course materials and complete assignments
- Have an editor (such as Sublime) for code and text files
- Have access to document preparation software that supports collaboration and ideally versioning. Google Docs/Sheets is recommended
- Check their email and Canvas inbox at least three times per week
- Have skill in at least one modern programming environment

**CATALOG DESCRIPTION:** Basic concepts, principles, methods, techniques and practices of software engineering. All aspects of the software engineering fields. Use Computer-Aided Software Engineering (CASE) tools.

**PREREQUISITES:** CPSC 131; Computer Science or Computer Engineering major or minor; or Computer Science or Computer Engineering graduate standing.

**COURSE PURPOSE:** This class aims to provide an overview of the tools, both technical and non-technical, utilized in software engineering. It will cover various theoretical, practical, and recommended approaches used in different companies and industries. The primary goal is to equip students with the basic skills necessary to succeed in any software project, through hands-on experience in a group project that mimics real-world scenarios. Additionally, the course seeks to help students establish a portfolio that showcases their abilities.

**STUDENT LEARNING GOALS:**

1. By the end of the course, students will have an understanding of the importance of software engineering and how it relates to various stakeholders

2. Students will have the ability to evaluate, select, and implement an appropriate software development process and methodology for creating software

3. Students will be able to apply techniques and methods for constructing and managing software products throughout the entire software development cycle

4. Students will be able to identify and distinguish between different software designs and architectures, and evaluate various design and architecture patterns for a specific project

5. Students will be able to evaluate software quality and suggest ways to improve it

6. Students will be aware of the ethical responsibilities of software engineering and the actions necessary to maintain ethical standards within the profession

**REQUIRED TEXTBOOK: "**Soft Skills, Sonmez", 978-0-9990814-5-7 (free via Kindle Unlimited)A "Philosophy of Software Design, Ousterhout", 978-1-7321022-1-7 (Both can be find online)

**OTHER REQUIRED MATERIALS:** Lecture notes provided on Canvas class website, made available as the semester progresses.

**DESCRIPTION OF ASSESSED WORK :**

**Exams:** One midterm and one final exam will be given; open book, open note, and will cover lecture, lab, and group project material. There will be NO MAKEUPS for missed exams except for by advance request for documented exceptional circumstances. The first exam (midterm) is scheduled in **Week 9**. The second exam (final) is scheduled in the **Last Week** of the semester. The mode of the exam is to be determined .

**Homeworks**: There will be about 3 homeworks in this class. Each homework is worth 75 points. There will be a "Homework 0" which gives you an example of what midterm/final questions are like. It is graded but is worth 0 points. It's just for your reference.

**Group Project:** There will be one group project for groups of 5-7 people. I will assign people to groups after the class roster has settled. The overview will be available the second week of instruction. It will require collaboration time outside of the Lab. Part of the Lab will be used to review progress for each group.

**Discussion Boards**: Discussion Board assignments will be present most weeks. You'll have the week to respond, and the results will usually form a part of the next lecture. Your participation helps you master the skills in the course, and will be reflected in your performance in the group project and exams, not to mention your career. The grade is 5 points each: (2 effort, 2 quality, 1 participation).

**GRADING STANDARDS AND CRITERIA:**

Grades will be based on following:

- Class Participation - 5%
- Homework - 10%
- Mid Term - 20%
- Final Exam - 30%
- Project - 35%

Each student's weighted numerical average into letter grade, shown next.

| Grade | Percentage | | Grade | Percentage | | Grade | Percentage |
|---|---|---|---|---|---|---|---|
| A+ | 98-100% | | B | 84-86% | | C- | 70-73% |
| A | 93-97% | | B- | 80-83% | | D | 60-69% |
| A- | 90-92% | | C+ | 77-79% | | F | below 59% |
| B+ | 87-89% | | C | 74-76% | | | |

Computer Science majors must earn a grade of C or higher in this course to receive credit. Computer Science majors earning grades of C- or lower must repeat the course.

Keep all assignments and exams returned to you so that any discrepancies can be easily and fairly resolved.

Note: While I make every attempt to ensure accurate grading in near-real time for exams and as prompt as possible grading for lab/assignment work, Canvas is not the official gradebook. The CSUF Portal is the official gradebook. Make sure you understand the monitoring of your grade and correct calculation of your weighted grades based on the table below. My final grades will be based on the weights below for all work.

**LATE ASSIGNMENTS:** Assignments turned in late will have the grade reduced 10% for each day after the assignment due date (up to 50%) unless approval for late work is given in advance. Late assignments and forms will be accepted up to one week after the original due date. After a week, the grade will be entered as 0. **If an assignment cannot be accessed when I open it for grading, it will be marked late until I can open it** (Google Docs – make sure all links are "Anyone who has this link").

**TIMES AND TIMEZONES:** All listed times are Pacific Time Zone (Daylight Savings when appropriate). It is your responsibility to translate that to your local time zone as needed. Assignments and projects are due at 11:59 pm of the due date unless otherwise explicitly stated.

**EXTRA CREDIT POLICY:** Extra credit is not available. Please do not ask for extra credit.

**ATTENDANCE POLICY & PARTICIPATION POLICY:**

**Administrative drops:** Any student who misses the first class meeting may be dropped from the class, unless they contact the instructor or Computer Science department within 24 hours.

**Religious Holidays:** If one will miss a class or an exam due to observance of a religious holiday, please notify the instructor by email (dhrutipatel@fullerton.edu) in the first week of class.

**Attendance:** While software engineering is usually performed by on-site/co-located teams, it too has adapted to the new distancing realities.

Therefore, this section of the class will not require in-person attendance at either the lectures or the labs.

Lectures will be presented and recorded on Zoom and recordings available afterwards. It is your responsibility to "attend" those in a timely manner if you choose not to attend in person. Note that labs have in-person exercises that are critical to your mastery of the concepts.

However, this course will have a group project. Collaboration effectiveness (either online or in-person) will be a component of your grade via this project. This project will be performed and assessed over the semester so synchronous participation will be required. Teams are instructed to accommodate distancing requests by team members, exactly as would occur in industry.

**ACADEMIC DISHONESTY POLICY:**

Cheating, plagiarism, and all forms of academic dishonesty are expressly forbidden in this class. 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 using

notes or aids or help of other students on tests and examinations in ways other than those expressly permitted by the instructor, plagiarism as defined below, tampering with grading procedure, and collaborating with others on any assignment where such collaboration is expressly forbidden by the instructor. Plagiarism is defined as the act of taking the specific substance of another and offering it as one's own without giving credit to the source (e.g., copying another person's program). When sources are used, acknowledgment of the original author or source must be made following standard scholarly practice. **You are not allowed to use any material from any website that provides solutions to the assessed work for a fee or free of charge. Instructors will use software to detect similarity and plagiarism.**
By submitting work for evaluation, the student acknowledges that he/she has adhered to the spirit of the university's academic honesty policy and that his/her submission is an original work done by the student unless otherwise directed to work in groups. It is the student's responsibility to be aware of and follow the spirit of CSU Fullerton's academic honesty policy found at http://www.fullerton.edu/senate/publications_policies_resolutions/ups/UPS%20300/UPS%20300.021.pdf . Failure to follow the spirit of the academic honesty policy will result in a severely negative evaluation of the work in question. Each offense will be reported to the Department Chair and the Dean of Students office, Student Conduct. A first offence will result in a zero score on the offending assignment. A subsequent offence will result in an F in the course.
**Collaboration:** Collaboration is not allowed on any exam. You may work on projects in groups of **up to 5-7** but you must make your own submission which includes all group members' names. You may work freely with your fellow group members, but must limit the input you get from sources outside your group:

- You may help each other understand the homework and brainstorm general solutions, but each one of you must develop and submit their own distinct work.
- You may give each other technical support, for instance troubleshooting, installing the compiler or logging in to Canvas.
- You must separate to develop your own detailed solution of the homework as well as of the group project..
- Given these requirements, any submissions with identical excerpts, or excerpts that are identical up to superficial rearrangements, will be considered highly suspect of plagiarism.

**POLICY ON RETENTION OF STUDENT WORK:**
Work is submitted through the Canvas course website and shall be retained on the course website for a reasonable time after the semester is completed (see UPS 320.005).

**UNIVERSITY INFORMATION:**
Canvas: As a registered student you are enrolled both in Canvas and TITANium. We will be using only Canvas. Problems? Contact the student help desk at (657) 278-8888 or email (StudentITHelpDesk@fullerton.edu).
**ADA Accommodations for Students with Special Needs:** Students requesting accommodations shall inform their instructors 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 or examinations.
Please inform the instructor during the first week of classes about any disability or special needs that you may have that may require specific arrangements related to attending class sessions, carrying out class

assignments, or writing papers or examinations. Any student who, because of a disability, may require special arrangements in order to meet course requirements must contact the instructor and the Office of Disability Support Services as soon as possible to make the necessary arrangements. The instructor may request verification of need from the Dean of Students Office. Students are encouraged to contact the Office of Disability Support Services within the first week of the semester to best ensure that the appropriate accommodations are implemented in a timely fashion. The Office of Disability Support Services' website is http://www.fullerton.edu/DSS/ . They can be reached by phone at 657-278-3117, TDD at 657-278-2786, or email at dsservices@fullerton.edu . Their office is located in University Hall, room 101. The instructor may request verification of need from the Dean of Students Office.
Ms. Lindsay O'Neill in the Pollak Library <jloneill@Exchange.FULLERTON.EDU> will be able to answer technical questions about accessibility of specific library-provided resources.

**Software for Students:**

Did you know you can get FREE and low-cost software for being an active CSUF student? Software can be requested from the CSUF Student Technology Services website.

**Emergency Contact:** For your own safety and the safety of others, each student is expected to read and understand the guidelines published here. In an effort to keep our campus community informed and to comply with the California State Education Code, Chapter 16, of the Donahue Higher Education Act, Section 67380; the California State University, Fullerton Police Department prepares the California Campus Safety Plan annually. The plan can be found on the University Police website under the Jeanne Clery-Crime Prevention tab or by clicking on this link. Should an emergency occur, follow the instructions given to you by faculty, staff, and public safety officials, or contact the University Police at (657) 278-3333. An emergency information recording is available by calling the Campus Operation and Emergency Closure line at 657-278-4444.

**Library Support**:The Pollak Library has many services to offer students. Assistance available for online students includes online instruction guidelines available on the library website. **]**

**University Learning Center**: The goal of the University Learning Center is to provide all CSUF students with academic support in an inviting and contemporary environment. The staff of the University Learning Center is carefully selected and trained to assist students with their academic assignments, general study skills, and computer user needs. The ULC is located in the Pollack Library North, 2nd Floor. The services that the ULC provide to CSUF students include an open computer lab, tutoring, workshops, online tutoring, and collaborative learning. The online tutoring option allows students to submit their paper for constructive feedback. More information can be found on the University Learning Center website**.**

**Writing Center**: The Writing Center offers all registered CSUF students the opportunity to receive writing assistance. The Writing Center is located in MH 45, the basement of McCarthy Hall, on the campus of California State University, Fullerton; 657-278-3650. More information can be found on the Writing Center webpage.

**RECORDING & TRANSCRIPTION OF CLASS CONTENT** is governed by UPS 330.230, http://www.fullerton.edu/senate/publications_policies_resolutions/ups/UPS%20300/UPS%20330.230.pdf . The instructor permits class content to be recorded or transcribed by students when mandated to do so by the Americans with Disabilities Act or by other federal or state laws. Any recording of class content

is for private use and study and shall not be made publicly accessible without the written consent of the instructor and students in the class.

**TENTATIVE SCHEDULE:**

| Week | Dates | Theme, Topics |
|---|---|---|
| 1 | 1/23 | Class Intro, Prof Dev, The Need of Software Engineering |
| 2 | 1/30 | Software Engineering, Teams, Organizations |
| 3 | 2/6 | Processes and Methodologies Overview |
| 4 | 2/13 | Agile and Scrum |
| 5 | 2/20 | **No Class (PRESIDENT DAY)** |
| 6 | 2/27 | Scrum in Detail |
| 7 | 3/6 | Scrum, More |
| 8 | 3/13 | CASE & CM |
| 9 | 3/20 | Software Quality and Testing |
| 10 | 3/27 | **No Class (SPRING BREAK)** |
| 11 | 4/3 | Requirements and Risks |
| 12 | 4/10 | Architecture and Design |
| 13 | 4/17 | Design and Architecture |
| 14 | 4/24 | Ethics, Trends |
| 15 | 5/1 | Security |

All the labs will be on Wednesday during the class time.

**ACKNOWLEDGMENTS:** Portions of this syllabus are drawn from syllabi authored by Professor Bruce McKenzie.