Department of Computer Science

Syllabus-CPSC 254-01 Software Development with Open Source Systems

Location: CS – 408

Office: TBA

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Office hours: Th 3-4pm/by appointment

Zoom Link: https://fullerton.zoom.us/j/9560449669

Course Description

This course is designed for students with prior programming knowledge. It will introduce students to open source software (OSS) development, OSS history, licenses, basic concept of operation system, project management, and professional coding styles. Many companies uses OSS to cut development cost and time, because developers can build their code on top of existing software rather than starting from nothing. OSS community is also helpful for development process and can potentially provide function like customer support. However, it also has issues like commercialization and license. After completing this course, student will be familiar with OSS development.

PREREQUISITES

CPSC120, CPSC121, CPSC131

G.E. REQUIREMENTS

This class does not meet any CSU General Education requirements.

Course Objectives and Learning Goals

1. Develop well-designed software that solves computational problem with the use of existing OSS.
2. Demonstrate the ability to write easy to read code and stylish comments.
3. Demonstrate the ability to use Computer-Assisted Software Engineering (CASE) tools in the development of OSS and some familiarity with command line environment OSS development.
4. Familiar with key people and milestones in OSS and open source advocacy history.
5. Familiar with software licenses and demonstrate ability to recommend license based on constraints and requirements.

Textbooks

ALL textbooks are available online.
Open Sources: Voices from the Open Source Revolution, Chris Dibona, Sam ockman, and Mark Stone, « http://www.oreilly.com/openbook/opensources/book/ »
Linux Command Line, William E. Shotts, Jr., « http://linuxcommand.org/tlcl.php »
Getting Started with Ubuntu 16.04, The Ubuntu Manual Team, « https://ubuntumanual.org/ »
Pro Git , Scott Chacon, « https://git-scm.com/book/en/v2 »

Synchronous/Asynchronous Instruction

Due to the pandemic, first two weeks of class will be offered online through ZOOM, and in person afterwards. However, this might change based on how the pandemic goes. Students are **REQUIRED** to join class with their CSUF account, otherwise they cannot be admitted into zoom meeting.

Course Communication and Response Time

Course announcements and individual email are sent through the learning management system (LMS) Titanium/Canvas, which only uses CSUF email accounts. Therefore, students MUST check CSUF email on a regular basis. Students should communicate with the through CSUF email. Students are expected to include CPSC254 in email titles. Email with proper title will be replied within 48 hours on business days.

Grading Standards, and Criteria

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

Grade	Percentage	Grade	Percentage	Grade	Percentage
A	95-100%	B-	80-83%	D	60-69%
A-	90-94%	C+	77-79%	F	Below 59%
B+	87-89%	C	74-76%		
B	84-86%	C-	70-73%		

At the end of the semester, cumulative score will be rounded up to the nearest whole number.
EX: a cumulative score of 94.2% will be rounded up to 95% and the final letter score will be an A.

Extra Credit Policy
Extra Credit is not available. Please do not ask for extra credit.

Grading Policy

Final grades are computed by first finding the average score in each category described in the table below. All scores are normalized to a scale of 0 to 100 before being averaged. The average score for each category is then used to compute the weighted average according to the weights. The resulting value will be the final grade and is converted to the letter grade according to the second table on the right. Standard rounding policies will be applied.

Assignments & Lab Exercises 25%
Project 35%
Quiz 10%
Midterm 10%
Final 20%

Participation

Students are expected to come to class on time and take good notes. Lab participation is also expected. Students may leave early in lab sessions if they finish lab exercises.

Quiz and Final

Quiz and final help track and determine students' proficiency on class topics and keep students checked for class progress. Quizzes are offered at random time, usually at the beginning or the end of lecture during lab. Each quiz is 15mins long. Quiz duration might be extended if most students cannot finish it in time.

Assignments

Project
Students will be working on a class project through the semester. Project is expected to be done in a small group of 2 or 3 students. Project topics and detailed grading rubrics will be provided in week 3. The project should be written in C, C++, or Java and will run on a Linux based system.

Lab Exercises
Students will receive lab exercises for most weeks. Depends on the topic, they may be done in group or individually. Lab exercise topics can be found in tentative schedule section. Students are expected to come to lab

sessions and work on lab exercises.

Other Homework
There will be a few other assignments including short summary of textbook, thoughts on OSS history, thoughts on different licenses etc. They are centered more on thoughts of certain topics rather than technical specifications.

Assignment Submission

Students are expected to submit their assignments through canvas. In case of technical difficulty, zip all files of a submission together and send to my email (treddy@fullerton.edu). Students are expected to name their submission in the format of CPSC254 + assignment name + student name/group name.
EX: for lab exercise 3, Student Alpha should name submission as CPSC254 lab exercise 3 Student Alpha.

Late Assignments

For lab exercises, ideally students should finish and submit their work by the end of lab sessions. However, submissions before the day of next lab session are accepted and will have no score deduction. Lab exercises submitted after that will have a 20% score deduction, and no submissions will be accepted after the day of next lab.
EX: On Feb 3, a student is having trouble finishing lab exercises before the end of lab session. The student decides to take lab exercise home and finish it later. If the student submits it **before** Feb 10, the student will not be deducted in lab exercise grade. If the student submits it on Feb 10, the submission is still accepted, but if the student receives 35 out of 40 points of that lab exercise, the student's score will be deducted 20% and only get 28 out of 40 points for that lab exercise. If the student fails to submit it by Feb 10, the student's submission will not be accepted.

For project, students are expected to work on their own pace, and have everything ready by week 13. I will not deduct any point if students are able to finish and submit their projects before lab session of week 13. Submissions received after that will result in a 5% score deduction for each late day. (0 if submitted later than 20 days after the due date.)

For all other homework, no late submissions are accepted.

Tentative Class Schedule

Please note: Class schedule is subject to change based on class progress through the semester.

Week 1
Class Introduction
Lab 1: Installing an OS

Week 2
Operation System Basics and Licenses
Lab 2: Linux-based Operating Systems

Week 3
Installing and Navigating a Linux OS & Project Overview
Lab 3: Using the Shell

Week 4
Linux Command Environment
Lab 4: More Shell Scripting

Week 5
Package Management
Lab 5: Install an Application

Week 6
Automated Testing & Midterm
Lab 6: Make a simple website

Week 7
Version Control
Lab 7: Git Hub Versioning

Week 8
Open Source Libraries
Lab 8: Disk Partitioning

Week 9
Project Development
Lab 9: Install and inspect Free BSD

Week 10
Linux Utilities
Lab 10: Utilities

Week 11
Linux Servers
Lab 11: Linux Server Installation

Week 12
Linux Security
Lab 12: Remote Access Practices

Week 13
Alternate Desktops
Lab 13: Installing a Second GUI

Week 14
What is Linux Used for?
Lab14: Class Project Presentations

Week 15
Class Project Presentations
Lab 15: Class Project Presentations

Week 16
Final Exam

Policy on Retention of Student Work

Student work submitted for this course shall be retained by the University or its academic employees for a reasonable time after the semester is completed.

Online Etiquettes

Each student is expected to conduct themselves in a professional manner during the class - taking full advantage of the learning opportunities available. This includes attending online sections on time, take good notes, and participates in class discussion. Students are not required to open their camera. Students may communicate or participate in discussion through ZOOM chat if necessary.

Technical Requirements

Other than requirements in prerequisites, students are also expected to

1. Have basic computer competency which includes:
    a. the ability to use a personal computer to locate, create, move, copy, delete, name, rename, and save files and folders on hard drives, secondary storage devices such as USB drives, and cloud such as Google Drive (Titan Aps) and Dropbox;
    b. the ability to use a word processing program to create, edit, format, store, retrieve, and print documents;

    c. the ability to use their CSUF email accounts to receive, create, edit, print, save, and send an e-mail message with and without an attached file; and
    d. the ability to use an Internet browser such as Chrome, Safari, Firefox, or Internet Explorer to search and access web sites in the World Wide Web.
2. Have ongoing reliable access to a computer with Internet connectivity for regular course assignments
3. Utilize a recent version of Microsoft® Office 2019 (for P.C.) or 2020 (for Mac) including Word, PowerPoint, and Excel to learn content and communicate with colleagues and faculty; have the ability to regularly print assignments or Microsoft Office 365
4. Maintain and access three times weekly their CSUF student email account
5. Use Internet search and retrieval skills to complete assignment
6. Apply his/her educational technology skills to complete expected competencies
7. Utilize other software applications as course requirements dictate
8. Utilize the learning management system (LMS) Titanium/Canvas, to access course materials and complete assignments

Important UNIVERSITY INFORMATION and Student Policy Website

You can find all the information through this link: http://fdc.fullerton.edu/teaching/syllabus.php

Topics include:

Students with Special Needs

Academic Dishonesty Policy

Emergency Preparedness

Undergraduate Student Learning Goals

General Education: Programmatic Student Learning Goals and Learning Outcomes

Graduate Student Learning Goals

Student Learning Outcomes by Degree Programs

Library Support

Final Exams Schedule

ACADEMIC DISHONESTY POLICY

Cheating, plagiarism, and all forms of academic clishonesty 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 clishonesty. 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.pgf 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 offense will result in a zero score on the offending assignment. A subsequent offense will result in an F in the course.

Collaboration: Collaboration is not allowed on any exam. 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 assignment and brainstorm general solutions, but each group 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 to the problem, and type in your own source code and project report.
•Given these requirements, any submissions with identical excerpts, or excerpts that are identical up to superficial rearrangements, will be considered highly suspect of plagiarism

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 rhat you may have that may require specific arrangements related to attending class sessions, carrying out class assignn1ents, 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.I'ULLERTON.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. Io 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, 2'"1 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.
Graduate Student Support: The University's central office for graduate education, the Office of Graduate Studies provides services and support to students and potential students. The Graduate Student Success Center (GSSC) provides academic tutoring and coaching to graduate students. More information can be found on the Graduate Studies Office webpage and Graduate Student Success 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.p 4f. 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.

COURSE RULES & CLASSROOM MANAGEMENT: Unless an agreement or accommodation is reached between the student and the instructor, these rules must be followed.

•Attendance at all regularly scheduled zoom lectures is mandatory.

•If it 1nakes noise, silence it.

•The student is responsible to be aware of any course announcements including changes to due dates and requirements.

•Third party work (code, artwork, 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.