CMPS 4910 Senior Project I - Fall 2022

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Course Syllabus (all sections)

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CMPS 4910 Senior Project I
Unified Syllabus (all sections) - Fall 2022

Instructor and Contact Information – By Section

Section 1 – Dr. Albert Cruz

Course Meets: Fridays 2:00 to 3:40pm in Science III 311
Virtual Option: Available at request, must contact instructor **beforehand**
Email: acruz37@csub.edu
Office Hours: MWF 1:30-2:30PM. TuTh 10:00-11:00AM
      Also available via Discord and e-mail during most normal business hours
      Discord server invite link: https://discord.gg/RBQK3aegXy

Section 2 – Dr. Melissa Danforth

Course Meets: Fridays 4:00 to 5:40pm in Science III 311
Virtual Option: Zoom is available for those that cannot attend in person (see Moodle)
Email: mdanforth@csub.edu
Office Hours: MWF 11:00am - 12:00pm (Discord/email) and MW 5:30-6:30pm (Science III 319)
      Also available via Discord and e-mail during most normal business hours
      Discord server invite link: https://discord.gg/h79N87P

Section 3 – Dr. Kanwal Kaur

Course Meets: Fridays 8:00 to 9:40am in Science III 315
Virtual Option: Zoom is available for those that cannot attend in person (see Moodle)
Email: kgagnej@csub.edu
Office Hours: TBA (Zoom)
      Also available via e-mail during most normal business hours

Section 4 – Dr. Nick Toothman

Course Meets: Fridays 10:00 to 11:40am in Science III 311
Virtual Option: Zoom is available for those that cannot attend in person (see Moodle)
Email: ntoothman@csub.edu
Office Hours: MW 2:45 - 4:15 PM, F 2:00 - 3:00 PM. Appointments available F 3:15 - 4:15 PM.
      Science III 322 or Zoom: https://csub.zoom.us/j/399071682?pwd=RjlyTEFEL01tUzcxR2t2dmpERGc3Zz09
      Also available via Discord and e-mail during most normal business hours
      Discord server invite link: https://discord.gg/JjTt43fX

Class Information and Attendance

Moodle website: https://moodle3.cs.csub.edu/course/view.php?id=73

General Class Structure:

- First Day: Attendance required for class overview.
- Presentation Days: Attendance required. Presentation days are noted on the class calendar on Moodle.
- Team Check-Ins: All team members are required to attend team check-ins with the instructor. Teams will individually schedule check-in times with the instructor. Teams should select a time where everyone on the team is available. Check-ins can be scheduled in-person, or virtually via Zoom or Discord (depending on instructor).
- Individual Work and Team Work: Self-scheduled individual work and team work is also expected for this course.
- Time Expectations: Students should plan to spend about 6 to 8 hours a week (on average) attending sessions, completing assignments, working on their Senior Project, and coordinating with their team.

Please be considerate of others. If you are sick or think you may be coming down with something, please do not attend the in-person class sessions or in-person team meetings, and seek appropriate medical attention. If your instructor offers a virtual option, you may attend virtually if you are feeling well enough to attend virtually. Otherwise, contact your instructor as soon as possible to discuss your options.

Also contact your instructor if you have any issues with attending required sessions, such as time conflicts with other courses, technical difficulties, work conflicts, or other university excused absences. Contact your instructor as soon as possible after the absence, and preferably before class if you know you will not be able to attend.

Catalog Description

CMPS 4910 - Senior Project I (2)

After consultation with the faculty supervisor and investigation of relevant literature, the student(s) shall prepare a substantial project with significance in the designated area. The timeline, teamwork responsibilities, milestones, and presentation(s) will be scheduled. **Prerequisites: At least 12 semester units of 3000- or 4000-level CMPS courses.**

Prerequisites by Topic

Completion of multiple upper-division CMPS courses

Units and Contact Time

2 semester units. 2 units lecture (100 minutes).

Note: One semester lecture unit is equivalent to 1 hour of in-class time and 2 to 4 hours of out-of-class time. Since this is a 2-unit course, expect to spend on average about 6 to 8 hours per week working on your project, both in-class and out-of-class.

Type

Required for CS.

Required Textbook

None.

Recommended Textbook and Other Supplemental Materials

None.

Class Principles

This continues to be a trying time mentally, physically, and with work / life balance. The following principles will guide this course:

- *Communication*: If something unexpected has come up that interferes with your coursework or your ability to attend a session, please communicate with your instructor as soon as possible. Also, keep the lines of communication open with your team members if you cannot meet an assigned goal, attend a team meeting, or so forth. Similarly, should something come up unexpectedly in your instructor's life that affects a class meeting or team check-in meeting, the instructor will let the class or affected team know through email, Discord, and/or Moodle.
- *Respect*: There are many situations in computer science where differing, but equally valid, opinions may exist. Respect the rights of others to form different conclusions than your own, to develop different code than you might have developed, and to provide their input and opinions on the team project.
- *Compassion*: Remember that your team members, other class participants, and your instructor are all balancing many competing priorities beyond this course. Exercise compassion, kindness, and consideration when interacting with others.

Coordinator(s)

All tenured and tenure-track Computer Science faculty members.
AY 2022/23 Coordinators are Albert Cruz, Melissa Danforth, Kanwal Kaur, and Nick Toothman.

Student Learning Outcomes

CMPS 4910 is the first part of a two-term senior programming project sequence, with CMPS 4928 Senior Project II in Spring term being the second course in the sequence. All teams are expected to sign up to the same instructor for CMPS 4928 to maintain a seamless mentoring and supervision role for the project.

CMPS 4910 will complete the problem analysis and project design part of the Senior Project; emphasizing problem analysis and applying the knowledge of computer science areas to design solutions.

In this course, students will do the following:

- Work as teams on a team-chosen design problem, which will result in a substantial software project at the end of the two-course sequence.
- Choose a problem, analyze the problem, apply knowledge of computer science areas, and propose a solution to the problem.
- Plan the project implementation, including the timeline, individual responsibilities, milestones of the project, and use cases / user stories, as part of the project proposal document.
- Present the "project pitch" to the class describing their chosen problem and project.
- Meet regularly with the instructor for team check-ins to discuss progress on the project.
- Analyze the possible solutions, including a discussion of the analysis during team check-ins with the instructor and a written analysis in the end-of-term progress report.
- Begin implementation of the project. Teams work on their projects and discuss their projects with the instructor and class.
- Meet regularly outside of class with their team to work on their project. Also regularly complete individual work on the project and keep the team updated on that individual work at the team meetings.
- Present their implementation difficulties/problems, solutions, and experiences to the class, and listen for suggestions from others in the class, at the end-of-term progress presentation.

Specific requirements for this course are:

- Orally present to the class twice for the "team pitch" and end-of-term progress presentation. Every member of the team is expected to be present during these times.
- Write a project proposal that describes the problem, describes the team's analysis of the problem, analyzes possible solutions for the problem, provides use cases / user stories, outlines the basic features of the project, and plans for the project implementation over both terms of the course. Teams should verbally discuss their project ideas at team check-ins with the instructor prior to the proposal due date. The instructor may require a revision of the proposal if the chosen project is not at the expected difficulty for a Senior Project or if components of the proposal do not meet expectations for Senior Project.
- Maintain a git repository on GitHub or on Odin that is accessible to the instructor with the project code, documentation, and research. Team members are expected to regularly contribute actionable work to the repository. In CMPS 4910, most of the work is expected to be research, proof-of-concept code, test cases, and other preliminary work necessary for successful implementation of the project in CMPS 4928.
- Write a project progress report at the end of the term that states what the team has done to date, describes any changes the team has made to the project features and implementation plan, and provides justification for those changes. The end-of-term report grade will also contain the instructor's analysis of work submitted to the project's git repository by each team member.

NOTE: At the end of the two-term sequence, usually in late April, students are expected to present their projects to the campus community as a whole at the Senior Design Expo.

ABET Outcome Coverage

The course maps to the following student learning outcomes for Computer Science (CAC/ABET):

1. Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions.

2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.

3. Communicate effectively in a variety of professional contexts.

4. Recognize professional responsibilities and make informed judgements in computing practice based on legal and ethical principles.

5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.

6 (CS). Apply computer science theory and software development fundamentals to produce computing-based solutions.

Class Schedule

For presentation days, there will be a poll on Moodle where each team can sign up for a specific presentation time slot.

Week 1	Friday August 26th	Class overview and Begin team selections
Week 2	Friday September 2nd	Finalize team selections and Begin problem selection
Week 3	Schedule with Instructor	Team check-in with instructor to discuss project topic
Week 4	Friday September 16th	Hold for possible speaker
Week 5	Schedule with Instructor	Team check-in with instructor to discuss project proposal
Week 6	Friday September 30th	Project Proposals Due
Week 7	Schedule with Instructor	Team check-in with instructor to discuss project and any requested proposal revisions
Week 8	Friday October 14th	Hold for possible speaker Proposal Revisions Due (if requested by instructor)
Week 9	Schedule with Instructor	Team check-in with instructor to discuss project pitch
Week 10	Friday October 28th	Presentation Day: Project pitches from each team
Week 11	Schedule with Instructor	Team check-in with instructor to discuss project progress
Week 12	Friday November 11th	Holiday – Campus closed
Week 13	Schedule with Instructor	Team check-in with instructor to discuss project progress
Week 14	Friday November 25th	Holiday – Campus closed
Week 15	Schedule with Instructor	Team check-in with instructor to discuss end-of-term progress report and presentation
Finals Week	Friday December 9th	End-of-term Progress Report Due
Finals Week	Tuesday December 6th and Wednesday December 14th	End-of-term Progress Presentations

Note: Your instructor may require further team check-ins beyond those listed above on an as-needed, group-by-group, basis. The instructor will email teams about any required check-ins.

Academic Integrity Policy

All work completed by the teams is expected to be done by the individual team members, or public code that is used with appropriate instructor approval and with appropriate citation and documentation. Any public code that is not appropriately documented and cited in the git repository and the reports will be considered plagiarism.

Examples of violations of the Academic Integrity policy include, but are not limited to, the following:

- Submitting junk work to give the appearance of effort. Work submitted to the team git repository should be relevant to the code, research, or documentation components of the project. Example: Submitting a substantial amount to the code base that does not contribute to a project feature.
- Submitting an iteration or copy of public code as your own work. As noted above, public code must be approved by the instructor and appropriately documented and cited. Example: Most of your contribution to your group's project is a modification of an online tutorial

on web app games.

- Most of your code base has been reused from an assignment or project from another class. Example: Iterating your CMPS 3350, 3420, or 3680 project.
- Copying, paraphrasing, or quoting text in your reports or documentation without proper citation. If you need assistance with proper citations, the Writing Resource Center has resources available to help you. Example: Cutting and pasting a guide from a manufacturer into your software requirements.

Violations will result in consequences, either to a specific assignment grade or to the overall course grade. Lack of knowledge is not a reasonable explanation for a violation.

Refer to the Academic Integrity policy in the campus catalog and class schedule for more details. You can also refer to the Academic Integrity policy at the Dean of Students Office website at https://www.csub.edu/osrr/

Academic Accommodations

To request academic accommodations, please contact the Office of Services for Students with Disabilities (SSD) and email your instructor an accommodations letter from the SSD Office. Policies from the SSD Office relating to accommodations, such as scheduling policies for using their testing center, must also be followed. For more information about the services and policies of the SSD Office, contact their staff by email and/or visit their website at https://www.csub.edu/ssd/

Basic Needs Assistance

If you are experiencing challenges related to basic needs, such as food insecurity, housing insecurity, or other challenges, there are resources available to you.

The campus Food Pantry, located next to the Student Union, is open and available to all students, staff, and faculty. Please visit the Food Pantry website for hours and information at https://www.csub.edu/basicneeds/food-pantry/. Information about food distributions, CalFresh, and other food resources can be found at https://www.csub.edu/basicneeds/food-security. Information about food assistance at the Antelope Valley campus is at https://www.csub.edu/basicneeds/resources-students-csub-av-campus

The campus also has emergency housing available for full-time students on a first-come, first-served basis. For housing concerns, please contact Jason Watkins, Assistant Director for Basic Needs, at 654-3360 or Ashley Scott, the Assistant Director of Housing. You can find more information about housing assistance and contact email information at https://www.csub.edu/basicneeds/housing-stability

More information on basic needs assistance is on the Basic Needs website: https://www.csub.edu/basicneeds

Health and Well-Being

The CSUB Counseling Center has both regular-hours and after-hours counseling services available. Call 654-3366 to connect with their services. After their normal operating hours, you can press 2 at any time to connect to the after-hours service. More information is at https://www.csub.edu/counselingcenter/

CSUB's Student Health Services is available for basic health care needs, at little to no cost for CSUB students. You can find more information about their services at https://www.csub.edu/healthcenter/

Current information about CSUB's COVID-19 plans, policies, and resources can be found at https://www.csub.edu/covid-19

Technology Assistance and Software

If you need help with technology, such as a loaner laptop and/or hotspot, ITS has programs to provide technology assistance to students. Go to the following ITS webpage to learn more about their programs: https://its.csub.edu/step

The CEE/CS Department has academic software subscriptions available to students enrolled in CMPS and ECE courses. This currently includes Microsoft, VMware, and Mathematica. Go to the following page for more information: https://www.cs.csub.edu/downloads.php

The CEE/CS Department servers may also be used to host your team's project for Senior Project. Please contact your instructor to arrange appropriate accounts and access for your team.

CSUB ITS also many software products available to students through the Virtual Computer Lab (VCL). You will need to use your myCSUB credentials to access VCL. To see the full list of software and to access VCL, go to https://its.csub.edu/VCL

CSUB is also part of the MathWorks/CSU educational partnership, which provides free access to MATLAB and Simulink software. You will need to use your CSUB.edu email account to access these resources. For more information, visit https://www.mathworks.com/academia/tah-portal/california-state-university-bakersfield-31622169.html

General Team and Project Expectations

Teams are expected to consist of 3 to 5 students. Fewer than 3 students makes it difficult to develop a complex enough project and more than 5 students is difficult to coordinate.

Projects are expected to be complex and reflect a culminating experience in Computer Science. Expected project complexity and scope will be scaled by the size of the team. A team of 5 will be expected to complete a more complex project than a team of 3.

The project components should match the skills of the team members. For example, if the project contains a database, at least one team member should have completed CMPS 3420 and/or have extensive on-the-job experience with databases.

All teams will use git to store code, research, documentation, and other files related to the project. Teams can opt to use GitHub or Odin for their git repository.

Any SDKs, APIs, etc. used in the project must have the approval of the instructor and be appropriately cited and used. Any public code that is not appropriately documented and cited in the git repository and the reports will be considered plagiarism. All license and usage requirements of the original developers must also be followed.

Grading Categories

The grading categories for CMPS 4910 are:

Project Proposal	20% (75% individual contribution, 25% team)
Pitch Presentation	20% (25% individual contribution, 75% team)
End-of-Term Progress Report	20% (75% individual contribution, 25% team)
End-of-Term Presentation	20% (25% individual contribution, 75% team)
Teamwork	10% (50% individual teamwork skills, 50% team cohesiveness)
Participation	10% (100% individual)

Grades are posted on Moodle. It is your responsibility to check Moodle for grades and any comments on assignments. If you believe you submitted your assignment on time but the comment field says "assignment not submitted", contact your instructor.

Project Proposal

The proposal should clearly state what is the chosen project and the goals the team has for the project. The project should be verbally cleared with the instructor at one of the team check-in meetings prior to the proposal due date. The instructor may request a revised proposal if the initial proposal does not meet all criteria or the project is not sufficiently advanced for a Senior Project.

Grading Components:

- 25% weight: Executive Summary and Plan (team effort)
- 75% weight: Detailed Individual Contributions and Use Cases / User Stories (individual effort)

See the Moodle assignment for more details.

Pitch Presentation

Once the team's proposal is approved by the instructor, the team will give a short "pitch" presentation to the class introducing the team and describing the project. The pitch presentation will be about 5-10 minutes long. The team is expected to have a set of prepared slides (PowerPoint, Google, etc.) that they will have to turn in to their instructor via Moodle.

Grading Components:

- 75% weight: Prepared slides for the presentation (team effort)
- 25% weight: Individual oral communication skills from the oral communication rubric posted on Moodle

See the Moodle assignment for more details.

End-of-Term Progress Report

The progress report is due at the end of the term and should summarize where the team is on the project, what changes have been made, the justification for the changes, and a summary from each team member on their accomplishments during the term. The instructor will also evaluate the git repository for the team to determine individual contributions to the project.

Grading Components:

- 25% weight: Status report and changes made, with justification (team effort)
- 25% weight: A written summary by each team member of their individual accomplishments during the term. Hint: Regularly commit a text file or report of what you've done to git to make it easier to write this summary. (individual effort)
- 50% weight: Instructor evaluation of each team member's contributions to the git repository based on the quality of work and the level of effort. Put the project feature in the commit message to git so your effort is easily traceable to the proposal (individual effort)

See the Moodle assignment for more details.

End-of-Term Presentation

The end-of-term presentation will update the class on the status of the project, and can include a demo of code if the team has gotten that far on the project (demos will be required in CMPS 4928 but are optional in CMPS 4910). The end-of-term presentation is expected to be about 15 minutes long. As with the pitch presentation, the team is expected to have a set of prepared slides for the presentation, and the slides will need to be turned in to the instructor via Moodle.

Grading Components:

- 75% weight: Prepared slides for the presentation (team effort)
- 25% weight: Individual oral communication skills from the oral communication rubric posted on Moodle

See the Moodle assignment for more details.

Teamwork

Teams are expected to function as a cohesive unit on the project. Teamwork skills that the department expects at this level are:

- The ability to fulfill team duties and share in the work of the team.
- The ability to listen and communicate with other team members.
- The ability to meet deadlines to achieve project goals.

Grading Components:

- 50% weight: Individual teamwork skills on the above metrics as determined by the instructor observations of team dynamics during team check-ins and presentations, and by input from the peer evaluation of team members. (individual effort)
- 50% weight: Team cohesiveness and functionality as a whole (team effort)

See the Moodle assignment for more details.

Participation

This portion of your grade will be based on your attendance and participation at required class sessions, team check-in meetings, and presentation days. If you believe you have an allowed absence based on the CSUB Excused Absence policy, you must email the instructor as soon as possible to see if your absence qualifies as an excused absence.

Grading component is 100% individual effort.

Final Exam

There is no final exam for this class. Your end-of-term presentation and project progress report takes the place of the final exam.

Your end-of-term progress report is due on Friday December 9, 2022. This gives your instructor sufficient time to read the report, review your team's git repository, and otherwise assess your work before grades are due on Friday December 16, 2022.

Most of the end-of-term presentations will occur on Study Day, Tuesday December 6, 2022, during the normal class meeting time. If you are unavailable on Study Day, a second end-of-term presentation time slot will be set up on the day after final exams, Wednesday December 14, 2022.

Your instructor will notify your section about how to sign up for presentation time slots for your section. Make sure to select a time where all of your team members will be available to present.

Notify your instructor no later than Friday December 2nd (but preferably sooner) if you have a conflict with both of these days so we can find an alternative presentation time that works for everyone in your team.

Prepared By

Melissa Danforth on July 26, 2022

Approval

Effective Fall 2022

Last modified: Friday, August 26, 2022, 1:59 PM

◄ Discussion Forum

Jump to...

Zoom Information for Dr. Cruz's Section (Fr 2:00pm) ►

ⓘ Help and documentation

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Data retention summary
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