**Course Information - CSCI 3308**

| **Course info** | **Details** |
| --- | --- |
| **Semester** | Fall 2019 |
| **Credits** | 3 CREDITS |
| **Dates** | Monday, August 26, 2019 - Wednesday, December 11, 2019 |

**Class Meetings**

| **Section** | **Days & Time** | **Location** |
| --- | --- | --- |
| **100** | Monday & Wednesday, 10:00 a.m. – 10:50 a.m. | ECCR 150 |
| **200** | Monday & Wednesday, 1:00 p.m. - 1:50 p.m. | GOLD A2B70 |
| **100B** | All lectures will be available and viewable in the Canvas site. | N/A |

**Recitations**

All recitations are mandatory. Attendance will be taken by the TAs in the form of completion of an exercise during the recitations. You will be provided an additional two days to submit the rest of your recitation. Students with recitations on Wednesday will get upto Friday 11:59 p.m. to submit your work, those of Thursday get upto Saturday 11:59 p.m. and those on Friday get upto Sunday 11:59 p.m.

| **Section** | **Day & Time** | **Location** | **TA** |
| --- | --- | --- | --- |
| 101 | W 5:00 p.m. - 6:40 p.m. | ECCE 141 | Carl Mueller |
| 102 | F 8:00 a.m. - 9:40 a.m. | ECCR 235 | Alecio Madrid |
| 111 | Th 2:00 p.m. - 3:40 p.m. | ECCR 235 | Shreshtha Pankaj |
| 112 | Th 4:00 p.m. - 5:40 p.m. | ECCR 235 | Annika Muehlbradt |
| 113 | F 12:00 p.m. - 1:40 p.m. | ECCE 141 | Yash Sapra |
| 201 | W 6:00 p.m. - 7:40 p.m. | ECCR 235 | Srinjita Bhaduri |
| 202 | Th 9:00 a.m. - 10:40 a.m. | ECCR 235 | Josh Ladd |
| 203 | Th 3:30 p.m. - 5:10 p.m. | ECCE 141 | Srinjita Bhaduri |
| 204 | F 8:00 a.m. - 9:40 a.m. | ECCE 141 | Josh Ladd |
| 205 | F 10:00 a.m. - 11:40 a.m. | ECCR 235 | Shreshtha Pankaj |
| 206 | F 12:00 p.m. - 1:40 p.m. | ECCR 235 | Annika Muehlbradt |
| 207 | F 2:00 p.m. - 3:40 p.m. | ECCR 235 | Yash sapra |

**Instructor Information**

* **Name:** Sreesha Nath
* **Email:** [sreesha.nath@colorado.edu](mailto:sreesha.nath@colorado.edu)
* **Office Location:** ECOT 737
* **Office Hours:** By appointment through Calendly

**Course description and prerequisites:**

This course covers technology tools and methods for software development with a strong focus on best practices used in industry and professional development, such as agile methodologies, full-stack development, pair-programming, front-end user interface, back-end database, front-end-to-back-end integration, application security, using the cloud, using web services, and test-driven design.

The course consists of 2 lectures / week, and one recitation session / week. Students are assigned to a small group of 5-6 students from within their recitation section. Each small group then works together outside of class time to develop a working software application while applying the technology methods and tools covered in lecture.

**Requisites:** Requires prerequisite course of CSCI 2270 (minimum grade C-).

**Textbooks and Materials**

Required text: None.

Other required reading materials: Will be provided by the instructor each week via Canvas.

**Course Outcomes**

* The student will learn the fundamentals of software development methods and gain exposure and practice using common industry tools that are likely to be used in the workplace.
* The student will acquire state-of-the-art skills that will not only help them do their work in other programming classes but will also give them a very useful vocabulary to use on job applications and during interviews.
* The student will apply software knowledge and skills in the context of a small group semester-long project.
* From an employer’s perspective, skills learned in this course will boost the student’s resume.
* During the semester-long Small Group Application Development Project, the student will successfully use a variety of software development skills and tools introduced in class.
* The student will be equipped to choose the best software tool for use in a specific situation.

Brief, high-level list of topics to be covered (subjects may change as the semester proceeds.)

* Unix Shell Scripting
* Waterfall, Agile development methodologies
* Principles of Project Management
* Requirements Definition and Analysis
* Relational Database Design & Construction
* Pair Programming
* Source Code Version Control and Managing Code Conflicts
* HTML & CSS (“Front-end”)
* NodeJS (“middle layer”)
* SQL Query Language ( “Back-end”)
* Documentation of Code
* Web Services
* Cloud Computing
* Licensing/Copyright/Patents/IP
* Code Quality Assessment
* Testing Methods and Strategies
* Application Security
* Static and Dynamic Analysis
* Refactoring
* Code/Peer Review

**Grading**

All recitations, assignments, quizzes, exams will be graded by the instructor, the TAs or the Graduate Support Staff. In case of queries with grading, please feel free to reach out to your TA or me.

**Using Canvas**

The Canvas course pages are the official site for all notifications, assignments, and all submissions of work for grading (lab assignments, homework, quizzes and exams.)

**Piazza**

A Piazza page has been set up for all the students to collaborate on doubts concerning the course work. We encourage students to participate in answering questions before instructors can help out. Please refrain from posting solutions on Piazza. Also, tag the appropriate folder when posting questions so that it can be easily located by your fellow students.

**Homework Assignments**

The course includes FOUR homework assignments that comprise 24% (240 points) toward your grade. Each assignment must be completed and submitted via Canvas by its due date to earn full credit. All assignments will be posted on a Friday and will be due on Friday two weeks after, at 11:59 p.m. *For eg: Assignment posted on August 30 will be due on September 13 at 11:59 p.m.*

1. HTML & CSS (50 points)
2. Java Script (50 points)
3. SQL (60 points)
4. REST API (80 points)

**Group Project**

Students are required to form a team with other students in the same lab section. Each team will execute a software development project. The team will agree upon a software product that they will design, develop and present to the rest of the class during the course of the semester. This project makes up 30% (300 points) toward your grade. The project challenges students to use most of the software tools and development methods covered in lectures/labs. Project grades are based on the submission of the following milestones submitted during the course of the project.

| **Milestone** | **Points** | **Topic** |
| --- | --- | --- |
| 1 | 40 | Project Proposal |
| 2 | 35 | Project Plan |
| 3 | 50 | Group meetings with TA |
| 4 | 45 | Application Design & Architecture |
| 5 | 25 | Test Plans |
| 6 | 40 | Presentation |
| 7 | 50 | Project Summary |
| 8 | 15 | Reflection and Peer Evaluation (individual) |
| TOTAL | 300 |  |

**Note on Group Project Grade:** Milestones 1, 2, 4, 5, 6, & 7 are submitted to a team github repository for the team as a whole, not as individuals. So every member of the team receives the same score. However, at the end of the term, scores may be adjusted for each individual’s contribution to the team effort. Your final grade for the group project will depend on your effort and involvement on the project.

Milestone 8 is submitted via Canvas. You will receive an individual grade for this milestone.

Your Project Grade = (sum of project milestone grades) adjusted by your peers’ evaluation of your contributions and participation as a member of the team.

Peer evaluation is based on your team members’ ratings of your contributions. This includes your time, your work, your attitude, your communication, your accessibility, your persistence.

Your TA will be reviewing all of your team’s git commits.

**Late Submissions**

You can receive a three‐day extension on **any 2 homeworks or milestone assignments with a 10% grade penalty per day**. After three days, your assignment is considered past due and will not be accepted.

Each Lab/Recitation includes a lab assignment. A predefined portion of the assignment for each lab should be submitted to the TA by the end of the lab. In some cases, you might need more time to complete the lab assignment. You can have up to 48 hours after the end of your recitation section to submit your work for that that lab.

In the event of a documented personal, family, or medical emergency, consult your TA about receiving a penalty free extension.

If you know you will be missing a weekly lab recitation, you must talk with your TA before going to an alternate recitation period. If you attend an alternate lab session, then your lab assignment is due on the day you actually attend lab, not on the day of your normally scheduled lab recitation.

Lab work should be completed and turned in or approved by the TA during lab time.

**Distance Section**

All lectures will be recorded. The videos from the lectures will be available on the course's Canvas website.

**Exams**

During Weeks 8 and Week 13 there will be exams. Together the exams make up 20% of your final grade. The exams will be administered and graded by Canvas.

**Cheating**

(See the section on Honor Code below.)

For the most part, you must do your own work for this course. In some cases, assignments are completed by a team of students. In such cases, you can share the work, and share the grade. Note that on any work completed by a team of students or “pair programming”, you MUST include the names of ALL participating students on the work submitted.

Warning: Lab assignments and homework assignments are revised each semester. So turning in answers from a past semester will, at a minimum, cause you to lose points for incorrect answers. And, worst case, if you are caught submitting word-for-word answers from a past semester, you will be considered in violation of the honor code and subject to sanctions.

Under no circumstances are you allowed to submit someone else’s work and claim it as your own. If you are caught doing so, you will be in violation of the academic integrity policy and will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). The Honor Code Office has more information.

**Course Calendar**

This course consists of 17 weeks. Each week typically begins Monday morning at 8:00 a.m. and ends on Sunday evening at 11:59 p.m. (however there are some exceptions for holidays which will be announced via Canvas.) Lectures take place on Mondays and Wednesdays, and will cover the week’s topics. Lab times vary. Each student will sign up for a weekly lab time, and will attend that lab most weeks during the semester. There are a few weeks with no lab/recitation scheduled.

**Attendance**

In general, attendance at all lectures is not graded per se, but is highly recommended. You are responsible for knowing the material presented during lectures and labs, even if you are not in attendance when the material was presented. Distance students are expected to view all video lectures.

Attendance at lab/recitations is required. Your attendance at each lab/recitation will be recorded by the TA. Participation in a lab/recitation by PROXY is NOT ALLOWED. Each lab/recitation will require work for each student to complete. You can leave lab once your work is done and approved by the TA.

**Accommodations**

The university is committed to providing to all students the support and services needed to participate in this course. If a student qualifies for accommodations because of a disability, the student should submit to the instructor a letter from Disability Services in a timely manner (for exam accommodations provide your letter at least one week prior to the exam) so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities. Contact Disability Services at 303-492-8671 or by e-mail at [dsinfo@colorado.edu](mailto:dsinfo@colorado.edu). If you have a temporary medical condition or injury, see Temporary Medical Conditions: Injuries, Surgeries, and Illnesses guidelines under Quick Links at Disability Services website and discuss your needs with the instructor.

**Religious Observances**

Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required assignments/attendance. For students in situations where this applies, such issues must be communicated to the instructor as early as possible.

**Classroom Behavior**

Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, color, culture, religion, creed, politics, veteran’s status, sexual orientation, gender, gender identity and gender expression, age, ability, and nationality. Class rosters are provided to the instructor with the student's legal name. The instructor will honor student requests to be addressed by an alternate name or gender pronoun. Students must advise the instructor of this preference early in the semester so that appropriate roster annotations may be made. For more information, see the policies on class behavior and the student code.

**Discrimination and Harassment**

The University of Colorado Boulder (CU-Boulder) is committed to maintaining a positive learning, working, and living environment. CU-Boulder will not tolerate acts of discrimination or harassment based upon Protected Classes or related retaliation against or by any employee or student. For purposes of this CU-Boulder policy, "Protected Classes" refers to race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. Individuals who believe they have been discriminated against should contact the Office of Discrimination and Harassment (ODH) at 303-492-2127 or the Office of Student Conduct (OSC) at 303-492-5550. The full policy on discrimination and harassment has more information.

**Honor Code**

All students of the University of Colorado at Boulder are responsible for knowing and adhering to the academic integrity policy of this institution. Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct shall be reported to the Honor Code Council ([honor@colorado.edu](mailto:honor@colorado.edu); 303-735-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). The Honor Code Office has more information.

**Syllabus Changes**

The instructor reserves the right to modify this syllabus as needed during the semester. Should any changes be necessary, the instructor will inform students of the change and post and updated copy of the syllabus to Canvas.