ECE 568: Engineering Robust Server Software

Spring 2025
Tuesday/Thursday: 8:30-9:45am
Location: FITZPATRICK SCHICIANO B 1466

Instructor: Brian Rogers, brian.m.rogers@duke.edu

TAs:
Longhao Zhu - longhao.zhu@duke.edu
Evan (Han) Li - han.li2@duke.edu
Zixu Geng - zixu.geng@duke.edu
Kaixin Lu - kaixin.lu@duke.edu

Course Summary

In this course, students learn about important principles in server software design and development. These principles include topics such as handling asynchronous behavior, design for failure, basic security principles, scalability, and resilience. Students will put these ideas into practice by developing software reflecting the ideas learned in class.

Course Pre-requisites

This class is aimed at graduate students and seniors/juniors who are strong/competent programmers. Graduate students should have taken ECE 551 and ECE 550 and be in (or have already taken) ECE 650 [or have equivalent background]. Undergraduates should have had CS 308, ECE/CS 250, and be in (or have already taken) Networking, and Databases.

Textbook: None

Course Site: https://people.duke.edu/~bmr23/ece568/

Final Exam: Tuesday, April 29 from 2:00pm – 5:00pm Eastern time (in class)

Midterm Exam: Tuesday, March 18 (in class)

Course Discussion - Ed

We will be using Ed for class discussion. The system is highly catered to getting you help fast and efficiently from classmates, the TA, and myself. Rather than emailing questions to the teaching staff, I encourage you to post your questions on Ed Discussions. You can access the class Ed Discussions space from the link on the course Sakai site.

Assignments & Grading

The following reflects the expected breakdown of graded components of the course:

- Homeworks: 28%, Project: 22%, Midterm Exam: 20%, Final Exam: 30%

The following scale defines the final letter grading criteria:

> 97 A+	93-96.9 A	90-92.9 A-

87-89.9 B+	83-86.9 B	80-82.9 B-
77-79.9 C+	73-76.9 C	70-72.9 C-
67-69.9 D+	62-66.9 D	60-61.9 D-
< 60 F		

There is no curve grading, and no extra or special credits will be given. **Unfortunately, with any cut-off points, there may be students who fall slightly below a cut-off point. Students will not be promoted to the next grade level, just as I will not downgrade students to their lower grade level just because their grade is slightly higher than the cut-off points.** I reserve the right to shift the numerical cutoff points down, but this is solely at my discretion, and occurs when the change results in a letter grade that more accurately reflects the quality of the students work and effort.

Homeworks

You will have 4 homework assignments during the semester. For each homework, you MUST work with a partner, and you MUST change partners for each homework (so during the semester, you will have partnered with 4 different people).

To help in planning your semester, tentative homework due dates are as follows (all due at 11:59:59 PM):

- HW #1: 2/7, HW #2: 3/3, HW #3: 3/21, HW #4: 4/4

Course Project

You will have one larger course project, due Friday April 25th at 11:59:59 PM. For this project, you will work with a partner. Your partner may be someone you partnered with for one of the homeworks (but does not have to be). You may wish to use your homework pairings to help determine who you want to partner with for the project.

For the project, the class will be split in half, with half completing one set of requirements ("A"), and the other half completing the other set of requirements ("B"). Additionally, the class will be partitioned into interoperability groups, consisting of some partnerships with A requirements and some partnerships with B requirements. Within an interoperability group, any A partnership's project must work with a B partnership's project.

You MUST decide on your project partner by Friday, March 28. We will work to quickly put you into interoperability groups and give you a short period to swap if desired. You will need to submit your proposed protocol spec by Thursday, April 10, which will be a portion of your project grade.

Late Policy

Late homework submissions incur penalties as follows:

- Submission is 0-24 hours late: total score is multiplied by 0.9
- Submission is 24-48 hours late: total score is multiplied by 0.8
- Submission is 48-72 hours late: total score is multiplied by 0.6
- Submission is more than 72 hours late will receive no credit

Late submissions for the project are not allowed. In other words, projects submitted late will receive no credit.

Grade Appeals

All regrade requests must be in writing. Email the TA who graded the relevant portion with your questions. After speaking with the TA, if you still have concerns, contact the instructor. All regrade requests must be submitted no later than 1 week after the assignment was returned to you.

Exams

You will have one mid-term exam and one final exam (times and delivery formats listed above). These exams will be individual effort.

Academic integrity

Your work is expected to be your own (exams) or your partner's (homework/project). If you commit academic misconduct in this course and are caught, you will face the appropriate disciplinary procedures (undergraduates: referral to the Office of Student Conduct. graduate students: referral to the Associate Dean in charge of your program).

If you are unsure whether a certain course of action is permissible or not, please ask. If you think that asking is a bad idea because I would probably say "no," you can be fairly certain it is not permissible.

In addition to the measures taken by the university, the affected assignment(s) will receive zero credit, or possibly -100% in egregious cases.