

EECS 551: Discussion Section Fall 2021

Hello! This document provides an overview of how discussion will work in EECS 551 this fall. We want to emphasize that the purpose of discussion is to help you learn! So, if discussion is not useful, let us know, and we will do our best to make it better.

That being said, EECS 551 is a 4-credit graduate level course and it has a discussion section every Friday. The two sections (9:30 and 10:30) are **identical** so you only need to attend one section. We know this semester will be stressful for many of you for many different reasons (e.g., COVID concerns). We have made some adjustments to the course this semester to hopefully help (e.g., reduce # of exams from 3 or 4 to 2). But it is not all up to us as instructors; you must adjust as students too. Some suggestions for what you can do:

- Come to **office hours**! We are not scary people (we are really quite friendly), we will not yell at you or make you feel bad for not understanding something from the lecture, and you can learn a lot by interacting with us and your classmates in a smaller setting.
- Participate in the **Piazza**. Read questions from your classmates and see if you can answer them.
- Start making your **note sheets** (cheat sheets) early! If you make your exam note sheets as you study, they will be very helpful on homeworks and you will not have hand cramps the week before the exam.
- Read and **conform** to [UM face covering policy](#) to protect yourself and your classmates.
- **[optional]** Find a friend or group of friends in the class to work together with on tasks and to **discuss** questions about lecture.

Discussion format -- in person

Time & location:

- Friday 9:30 --10:30 AM, 1311 EECS.
- Friday 10:30 -- 11:30 AM, 1571 GGBL.

Discussion will often start out with a **mini-lecture** (about 15 minutes) to review a topic from that week's lecture or to introduce a task (read more about tasks below).

We will then typically move into **practice problem** solving or working on a **task**. For this part, you will **discuss** and try to solve the problem with your classmates in small groups. After each discussion, we will write out full solutions with commentary to any practice problems and post the notes on Canvas.

The week before exams, the discussion section will typically include an **exam review**. We will ask for suggestions on topics you want to review. Remember, discussion is about helping you learn!

So what are these tasks?

Tasks are basically mini projects. They are programming assignments and typically involve a classical problem: classifying handwritten digits. When we have a task, it will appear as the last problem on your **homework assignment**. It will often have a later due date than the rest of the homework. The homework assignment will specify the question is a task and will note that you can work in groups of 1-3. This means that you can do the task individually or work with up to 2 other people. If you work with others, your group only needs to turn in one write-up to gradescope and all members will receive the same grade.

In previous semesters, the feedback about tasks has been very positive! Tasks let you apply the material in the course to the real (and much studied) problem of handwriting recognition.

Rough schedule

This schedule is subject to change based on the lecture schedule and student questions/requests.

- Remember to bring a laptop (with Julia installed) to the discussion having **tasks**.
- 1. Sep. 3: Discussion overview, introduction to Julia and **Task 1**: handwritten digit classification using cos. (Z)
- 2. Sep. 10: **Finish Task 1**. Linear algebra review, Julia tips/tricks and debugging. (E)
- 3. Sep. 17: EVD and SVD review. (Z)
- 4. Sep. 24: Anatomy of SVD. (E)
- 5. Oct. 1: **Task 2**: classification using least squares. (Z)
- 6. Oct. 8: **Task 3**: classification using subspaces. (E)
- 7. Oct. 15: Midterm review. (Z)
- 8. Oct. 29: **Task 4**: dist2locs (multidimensional scaling). (E)
- 9. Nov. 5: MM, SVST and SVHT. (Z)
- 10. Nov. 12: **Task 5**: subspace learning. (E)
- 11. Nov. 19: **Task 6**: Logistic regression. (Z)
- 12. Nov. 26: No discussion due to Thanksgiving.
- 13. Dec. 3: Final exam review. (E)

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