

Syllabus for Math 453, Spring 2021

Instructor information

Instructor Name: Cartwright, Dustin

Class: TTh 9:50–11:05 in Zoom meeting 987 4965 1530. In order to join, you must be logged in to Zoom through your UTK credentials. In Zoom, you must choose “Sign in with SSO” and put “tennessee” as the company domain, after which you will be directed to enter your NetID and password.

Office Hours: M 2:00-3:00, W 12:30-1:30, or by appointment in Zoom meeting 999 1727 2631. You may use this Zoom meeting outside of office hours for discussing course content and homework with other people in the class.

Email: cartwright@utk.edu

Course Webpage: Further information, including a version of the syllabus which will be updated with any changes, is on the Canvas webpage for this course.

Course Communications: Most announcements will be made in class. I will use Canvas if I want to reach you between classes or if I want to be sure to reach everyone. For particularly urgent messages, I will use email.

The best way to contact me is by email. I will reply within 24 hours during the work week and usually faster, especially if you email me during working hours.

Student Learning Objectives

By the end of this course, a student should be able to work with vector spaces, bases, inner products, orthogonality, Jordan normal forms, normal

matrices, and semidefinite matrices. Graduate students will be prepared to pass the diagnostic exam in linear algebra.

Learning Environment

I expect you to attend lecture, pay attention, and participate in discussions. I would like you to leave your video on, so that we feel like a class and I have visual feedback. Please speak up or use the chat if you have questions.

You should treat the other students in the class with respect, in the classroom and in anything connected to it.

Text

A Second Course in Linear Algebra by Stephan Ramon Garcia and Roger A. Horn.

This book is provided to you through inclusive access, which means that you will automatically be billed for an online version of the textbook. If you obtain the textbook some other way, you should opt out of inclusive access in order to be refunded the cost of the textbook.

Course Assessment

- 5% participation
- 20% homework
- 30% two in-class midterms (15% each)
- 15% take-home midterm
- 30% in-class final

Letter grades will be assigned based on the scale: A 90-100%; B 80-89%; C 70-79%; D 60-69%. At my discretion, I may adjust the grades in order to make them more favorable.

Participation: Your participation grade will be based on completion of in-class assignments and polls, as well as participation in discussions.

In-class exams: The in-class midterms and the final will be given using the POSE protocol. You will not be allowed any notes, books, calculators, or other resources during the exam, and you will be monitored in order to verify this. On your computer, you will need to install Respondus LockDown

browser, which is not compatible with Chromebooks. You will also need a second device with Zoom and an active camera, such as a cell phone. In addition, you will need to take the exam in a room by yourself.

The second in-class midterm will cover material since the first midterm, but you will also need to know any foundational material. The final will be cumulative.

The midterms will be 1 hour and the final will be 2 hours.

Take-home midterm: For the take-home midterm, you will have 48 hours, from 9am Monday until 9am Wednesday, and you will upload your solutions on Canvas. You may use your notes, the textbook, course recordings, or any other materials on Canvas. You may not use any other resources, such as the Internet or other students.

The take-home midterm will be cumulative.

Homework: Homework is due by 9:50am, the beginning of class, every Tuesday. Assignments will be posted on Canvas at least a week in advance. You will upload your assignment as a single PDF through Canvas, and you are encouraged to typeset your solutions, if that is of interest to you.

I may use your submitted answers to make solutions and distribute those to the class. If you do NOT wish to have your answers shared, you may request that with your submission or by email. Otherwise, your homework submission is giving me permission to include it in solutions.

Your homework will be graded based on a representative subset of the problems. Your lowest homework grade will be dropped, in lieu of accepting any late homework.

In some weeks, graduate-level students will be assigned different problems, with more emphasis on theory and proof.

Citation policy: You must write your own homework solutions and acknowledge any sources that helped you with your work:

- You must credit any person you discuss the homework with. You may do this at the top of your homework, or on specific problems.
- You must credit other sources, such as the Internet or textbooks other than the assigned one, for the specific problems where you use them, with enough specificity for me to find your source.

In all cases, you should make sure you understand your answer and write

your answers in your own words. You may find sources that use different notation or conventions, so you should make sure your answers are correct for the conventions used in our course.

Make up Policy

You may miss up to two in-class participation grades without penalty.

No late homework will be accepted, but your lowest homework grade will be dropped. Circumstances that present long-term difficulties with completing the homework, such as due to COVID-19, may result in additional excused homeworks.

If you are unable to attend a scheduled exam, please let me know as soon as possible. Accommodation is at my discretion and requires appropriate documentation to be approved by the Dean of Students. Accommodation may mean taking the exam early or by having the final exam replace that component of your grade.

In the case of COVID-19, absences will be accommodated only if you have followed the university's policy on self-isolation.

How to be Successful in this Course

Use all the resources available to you: class time, class recordings, the book, class recordings, as well as the instructor and other students. Go over the lecture material after each class, either from your own notes, or the corresponding section in the textbook. Talk to other people in the class. Come to office hours.

If you find yourself struggling or falling behind, adjust sooner rather than later. Go back over the notes or the book. Come to office hours. Rework problems that you got wrong.

Start the homework early. Try to solve each problem on your own before looking for hints. When you get homework or exams back, look at the feedback and understand what you did wrong.

Course Outline and Schedule

- Thu, Feb 18: in-class midterm

- Thu, Mar 25: in-class midterm
- Wed, Apr 14, 9am: take-home midterm due (distributed on Mon, April 12)
- Tue, May 4, 8am: in-class final

The approximate schedule of daily topics is listed on the page “Course schedule”.

Campus Syllabus

If the instructor finds it necessary to make informational changes (e.g. office hours, schedule adjustments) due to students’ needs or unforeseen circumstances, students will be notified in writing/email of any such changes.