Math 54: Linear Algebra and Differential Equations

Introduction

In this course, we will learn some of the most basic concepts in linear algebra and differential equations, two different but related subjects.

Many physical phenomena are governed by differential equations. For example, the rotation of the solar planets around the sun can be accurately described by a set of time-dependent differential equations. Linear algebra provides the basic tools necessary to solve these differential equations (most commonly) on a computer.

Enrollment

Enrollment is entirely done online. So if you are waitlisted, check online often to see if you can enroll. If you have questions about enrollment, please immediately contact Thomas Brown of the Math Department at thomasbrown@math.berkeley.edu.

Staff

Instructor Prof. Ming Gu
Office: Evans 861
Office Hours: MTuW 4:15-5:30PM, F 12:30-2:00PM.
Phone: 642-3145

GSIs and Their Section Assignments

Section	Days/Times	Location	Instructor
101 DIS	TuTh 08:00AM - 09:29AM	Latimer 105	Kyle Russ-Navarro
102 DIS	TuTh 08:00AM - 09:29AM	Kroeber 115	Alois Cerbu
103 DIS	TuTh 08:00AM - 09:29AM	Evans 71	Dong Gyu Lim
104 DIS	TuTh 09:30AM - 10:59AM	Evans 75	Kyle Russ-Navarro
105 DIS	TuTh 09:30AM - 10:59AM	Evans 71	Alois Cerbu
106 DIS	TuTh 09:30AM - 10:59AM	Evans 6	Dong Gyu Lim
107 DIS	TuTh 03:30PM - 04:59PM	Latimer 121	Diego Bejarano Rayo
108 DIS	TuTh 11:00AM - 12:29PM	Evans 736	Kiran Luecke
109 DIS	TuTh 12:30PM - 01:59PM	Evans 736	Christopher W Eur
110 DIS	TuTh 12:30PM - 01:59PM	Kroeber 115	Tahsin Saffat
112 DIS	TuTh 02:00PM - 03:29PM	Evans 736	Christopher W Eur
113 DIS	TuTh 02:00PM - 03:29PM	Evans 75	Jeremy Meza
114 DIS	TuTh 02:00PM - 03:29PM	Evans 71	Tahsin Saffat
115 DIS	TuTh 03:30PM - 04:59PM	Latimer 122	David A Keating
116 DIS	TuTh 03:30PM - 04:59PM	Cory 285	Jeremy Meza
117 DIS	TuTh 05:00PM - 06:29PM	Latimer 105	David A Keating
118 DIS	TuTh 05:00PM - 06:29PM	Dwinelle 235	Kiran Luecke

119 DIS TuTh 05:00PM - 06:29PM Latimer 122 Diego Bejarano Rayo

GSI Office Hours

Instructor	Days/Times	Location
Kyle Russ-Navarro	Th 12:00-2:00PM	Evans 820
Alois Cerbu	F 2:00-4:00PM	Evans 854
Dong Gyu Lim	F 12:00 - 2:00PM	Evans 745
Diego Bejarano Rayo	M 1:00-3:00PM,	Evans 836
Christopher W Eur	M 4:00-6:00PM	Kresge Engineering Lib.
Tahsin Saffat	Th 3:30-5:30PM	Evans 852
Jeremy Meza	W 1:00-3:00PM	Evans 1047
David A Keating	TuTh 2:00-3:00PM	Evans 935
Kiran Luecke	M 3:00-4:00PM, W 10:00-11:00AM	Evans 840

Prerequisites

1A and 1B or equivalent. It is important to note that calculus courses at most institutions either have no differential equations, or less than Berkeley's Math 1B. Transfer students who have taken such a course need to learn **on their own** that differential equations material from

- Nagle, Saff and Snider, Fundamentals of Differential Equations, 8th Ed., Chs. 1 through 3; **or**
- Stewart, Calculus: Early Transcendentals, 5th Ed., Chs. 9 and 17.

This should be done by approximately the week of April 1. Please contact me if you have any concerns on this issue.

Textbook

- Custom Edition for University of California, Berkeley *Linear Algebra and Differential Equations*.

We plan to closely follow the [Math Department Course Outlines for Math 54](#) in both scope and timeline. Please pay close attention to this outline when you preview and review class material. **In order to stick with the Department outlines, the instructor will leave any material he did not have time for during lectures to the discussion sections and the students.**

Handouts

Lecture notes, homework assignments, and sample exams will be available on bCourses in the **files** folder.

Course Work and Grading

There are a total of 100 points you can earn toward your final grade in the course. There will be two midterm exams. The better of the two is worth 25 points and the worse 15 points. The final exam is worth 30 points. In addition to exams, there will be up to 13 homeworks and 10 quizzes. Only the best 10 homeworks and best 9 quizzes will be counted towards the final grade, with homeworks and quizzes totaling 15 points, respectively.

Homework is due on Tuesday during discussion. The homework is a written assignment to be done individually, although group discussion is allowed. Quizzes are on the days homework is due, to be given at the begining of discussion sections for 15 minutes. But there will be no quiz on Feb. 20 or Mar. 20, when we will have midterms. We will have a review for the final exam and and provide a sample test before each exam.

Since the GSIs are limited in their work hours, they will only grade **one** problem of their choice in each homework set. In addition, they will make most quiz problems to be similar to the problems in homework that is due on the day of the quiz. Doing **all** the homework problems is worth 1 point; and doing the graded problems correctly is worth additional 0.5 point.

Exam Dates

- **Midterm I: Feb. 20, Wednesday in class.**
- **Midterm II: Mar. 20, Wednesday in class.** This exam likely covers all materials in Part One and Chapter 4 in Part Two.
- **Final: 7:00-10:00PM, May 14, Tuesday.**

There are no calculators in the exams, but everyone is allowed a one-sided cheat sheet on an A4-sized sheet of paper in any font.

We will give no credit for homework turned in after the due date. The exams will be cumulative, and there will be no make-up exams or quizzes. However, you can skip one of the midterms (but not both). In this case, your other midterm and final will be worth 30 points and 40 points, respectively. Grades of Incomplete will be granted only for dire medical or personal emergencies that cause you to miss the final, and only if your work up to that point has been satisfactory.

Grade Range

There will be **no** class performance curve. Your final letter grade will be determined based on the total number of points you earn in the class. Below is a list of cut-offs.

- **A- to A+: at least 85 points**
- **B- to B+: between 70 and 85 points**
- **C- to C+: between 60 and 70 points**
- **D: between 55 and 60 points**
- **F: less than 55 points**

Academic Integrity

The University policy on academic integrity can be found at http://sa.berkeley.edu/conduct/integrity. Any forms of cheating on homework, quizzes or exams will be actively investigated and reported to ensure honesty and fairness in the class.