

## Mathematics 225 - Linear Algebra and Linear Differential Equations (Spring 2022)

**Lectures:** M,W,F 10:00am-10:50am ZHS 163 (class # 39526R)

**Discussion:** Tu, Th 2:00pm-2:50pm THH B9 (session 39527R)

Tu, Th 3:00pm-3:50am THH B9 (session 39528R)

**Instructor:** Ricardo Mancera Ph.D.

**Office:** KAP 244B

**Contact Info:** mancera@usc.edu

**Office Hours:** Th 12:00-1:30pm

Online. Meeting ID: 944 9322 0418, Passcode: 148986

Other in person or online office hours can be schedule by appointment.

### COVID:

- Students are required to wear a mask in classrooms and keep social distance.
- In case you feel sick do not attend lectures. (You can watch the lectures live via zoom)

### Help:

1. **Instructor.** (You are encouraged to contact the instructor for any type of help related to this course)
2. **TA.**
3. **Math center.** <https://dornsife.usc.edu/mathcenter>

**Text: Differential Equations and Linear Algebra**, Stephen W. Goode and Scott A. Annin, Fourth Edition (Pearson)

### Important Dates:

#### No class

- Monday January 17, Martin Luther King day.
- Monday, February 21, President's Day.
- Monday-Friday March 13-20, Spring Recess.
- Friday, April 29, Last day of classes

### Tests:

- Midterm 1 **Friday February 25<sup>th</sup>** During Lecture time
- Midterm 2 **Friday April 1<sup>st</sup>** During Lecture time
- Final Exam. **Monday May 9<sup>th</sup>, 8-10 am**

### Other:

- Last day to drop the class with a mark of "W". Friday February 25.

### Tentative Course Content:

Ch. 1	First-Order Differential Equations	Sections:	1.1 - 1.4, 1.6, 1.7
Ch. 2	Matrices/Linear Equations	Sections:	2.1 - 2.8
Ch. 3	Determinants	Sections:	3.1 - 3.4
Ch. 4	Vector Spaces	Sections:	4.1 - 4.10
Ch. 6	Linear Transformations	Sections:	6.1 - 6.5
Ch. 7	Eigenvalues and eigenvectors	Sections:	7.1 - 7.3
Ch. 8,9	Higher-Order Differential Equations	Sections:	8.1 - 8.3, 9.1 - 9.4

## Grading Plan:

Quizzes	15 %	(Quizzes based on assigned HW)
Homework	15 %	
Mid-Term Exams	40 %	(2 exams (50 min. each) based on lectures + HW)
Final Exam	30 %	(Comprehensive Exam, 2 hours)

## Homework:

For each chapter that we cover in the textbook, problems will be assigned and collected for grading. The homework assignments are group work. Each group consist of 3 students maximum. (students are free to choose their group members) **One assignment should be submitted per group.** These assignments are considered as *minimum requirements*. You should do more problems from the book on your own. **Homework is an essential part of the learning in this class.** The first page of the homework must include the names of the students and what problem or problems they contributed to the work. (There must be a uniform distribution of the work). Even though this is a group assignment, each student is responsible to understand (and work, hopefully in collaboration with their group classmates) all the problems that are submitted. The lowest score of the homework will be dropped at the end of the semester. **No Late homework will be accepted. *The homework must be correct, very well organized, clear and it should include all details in order to get full points.***

## Quizzes:

For each chapter that we cover in the textbook a quiz will be given in the discussion sessions, with problems similar to the assigned homework. **This is individual work.** The lowest score of the quizzes will be dropped at the end of the semester.

## Mid-Term Exams:

Two 50 minutes, mid-term exams will be given. **February 25<sup>th</sup>** and **April 1<sup>st</sup>** (during lecture time). These exams will cover typical problems arising from either the lectures, the assigned homework or the quizzes.

## Final Exam:

**Monday May 9<sup>th</sup>, 8-10 am**

Please see <https://classes.usc.edu/term-20221/finals/> to double check this date, before planning your summer break.

## Teaching Assistant:

Lundstrom, Daniel; Email: lundstro@usc.edu

## Course Grades:

Letter grades will be assigned according to the following table. You can calculate your course letter grade at any time of the semester, using the grades posted on blackboard, the grading plan above and the following table.

Grade	A	A-	B+	B	B-	C	D	F
Total (100)	≥ 91	86-90	80-85	70-79	61-69	51-60	41-50	≤ 40