Course: Linear Algebra and Linear Differential Equations
Instructor: Brian Ryals (ryals@usc.edu)
Office: KAP 444C
Office Hours: TBA
Teaching Assistant: Viktor Kleen (kleen@usc.edu)

Course Description: Matrices, systems of linear equations, vector spaces, linear transformations, eigenvalues, systems of linear differential equations. This corresponds to chapters 1-7 in the textbook.

Prerequisite: Math 126 or Math 127

Course goals: To learn the material of math 225; to learn that Math is more than just plugging numbers into formulas; to learn some basic programming skills; to meet new people and have fun while learning.

Textbook: Differential Equations and Linear Algebra (Third edition)
Authors: Stephen W. Goode, Scott A. Annin

Grade Distribution:

Weekly Quizzes 20%
Computer assignments 10%
Exam 1 (February 24th) 20%
Exam 2 (March 30th) 20%
Final Exam (May 4th) 30%

Spring 2016 Calendar

Classes Begin January 11
Martin Luther King’s Birthday January 18
Last day to drop with refund January 29
Last day to drop (without a grade of W) February 26
Presidents’ Day February 15
Spring Recess March 13-20
Last day to drop (with a grade of W) April 8
Classes End April 29
Final Exam May 4 (2-4 PM)

Final Exam

The final exam for Math 225 is scheduled for Wednesday, May 4th, from 2-4. Per university policy, students may not take the exam early, so make summer travel plans accordingly. In the event that a student is scheduled for two final examinations at the same time or is scheduled for more than two final examinations on one day, an attempt will be made to make alternative arrangements. For more information, see https://classes.usc.edu/term-20161/finals/
Academic Honesty Policy

The instructor strongly adheres to the University policies regarding academic integrity violations, and will strictly enforce these rules. Violation of these policies is a very serious offense and typically results with an F in the course.

Homeworks

Homeworks will be assigned under the “assignments” tab on blackboard. However, homework is not collected. It will consist of three parts.

The first part is an assigned reading. By the following Thursday, students are expected to have read all of the assigned reading and know how to work all the problems from the reading.

The second part consists of textbook problems to ensure that you understand the reading and reinforce the basic concepts. Some of these problems will be discussed and worked out during the discussion sections.

The third part consists of some additional problems not found in the textbook. These problems are usually more difficult than the textbook problems and are intended to test mastery of the important concepts. Students may wish to tackle these problems in groups.

Discussion

Discussion sections meet (with a graduate assistant) on Tuesday and Thursday. These meetings will be used predominantly to discuss the homework problems; they will not cover new material. Most of the Thursday sections will be devoted to taking quizzes that are similar in spirit to the homework questions. There will be no quiz the first week or during midterm weeks, but the discussion sections will still meet on those days.

Extra Help

Instructor’s Office Hours: Office hours are located in KAP 444C. Times will be posted shortly after the semester begins. Students may also request an appointment by e-mail for times outside of Office Hours. Students may also request an appointment with at least 24 hours notice by e-mail at other times on Monday/Wednesday/Friday. I am also sometimes available on Tuesday/Thursday but not every week.

Math Center: The Math Center is located in KAP 263 and is open Monday-Friday beginning at 8 AM and ending at 7 PM on most days. It is primarily run by math graduate students here at USC. The office hours of your TA will also be held in the Math Center, although you can go to the Math Center at any time it is open to ask for help.

Classmates: You can sometimes learn a lot just by talking to each other!

Quizzes

Quizzes will be given during discussion sections on most Thursdays. Quiz problems will come from
the homework assignments, usually just with different numbers (and often identical). Typically a quiz will consist of two problems from the textbook (part 2 of the HW) and two problems from the additional problems (part 3 of the HW). A student who has mastered the homework problems should have little difficulty with the quizzes. No calculators or notes are allowed during the quizzes.

The goal of the quizzes is that students will be able to view their quiz grades as an assessment of how well they understand the material found in corresponding homework assignments.

Computer Assignments
Computer assignments will be given roughly every three weeks during the semester using mathematical software packages. The software will be accessible in the computer lab in KAP 262. It is not expected that students will know how to use this software in advance; the assignments will serve as a tutorial to teach the basics. Students may submit the computer assignments in groups of up to 3.

Exams
There will be two exams during the semester (not cumulative) and a final exam (cumulative). The goal of the exams is to assess whether students know, use, and can synthesize what they have been taught throughout the course. Consequently, the problems on the exams will not just be the same as those found on the homeworks, but a student who understands all the techniques and when to use them will be able to tackle every problem on the exams.

If you must miss an exam because of a prior obligation, you must speak to me about it IN ADVANCE of the exam. If you miss an exam for an unforeseen but valid reason (e.g., illness) you must contact me (by e-mail) as soon as possible and obtain a WRITTEN EXCUSE (e.g. from a medical professional). If you miss an exam WITHOUT a written excuse (e.g., your alarm didn’t go off) you MUST contact me within 24 hours of the exam time. If you do so, you will be given a different exam as a make-up, but will automatically lose 20 points (so the highest possible grade will be 80%).

Attendance Policy
There is no attendance policy for either lectures or discussion sections, but it has been my experience that students who consistently come to class do better than those who do not. A student who misses either lecture or discussion is responsible for all missed material.

Grades
In addition to a raw numerical score, a letter grade will be assigned to every exam to give you an idea of where you stand in the class. In addition, you will be given a letter grade shortly before the drop deadline that indicates my best estimate of your course grade at that point.

Grades in the A, A- range represent work that is excellent.
Grades in the B+, B, B- range represent performance that is substantially better than the expectations.
Grades in the C+, C, C- range represent performance that meets expectations.
Grades in the D+, D, D- range represent performance that is substantially worse than the expectations.
Grades in the F range represent performance that is not acceptable for credit.
Disabilities

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs each semester. They will give a certified letter; please bring it to me as soon as possible, and at least one week prior to exams in the case you need special accommodations on the exam.

The calculator question

A calculator is not needed for homeworks in this course and is not allowed on quizzes or exams.

Disclaimer

The instructor reserves the right to make necessary changes to the syllabus during the semester.