

Syllabus for Math 141 Fall 2025 (London)

Linear Algebra, Multivariable Calculus, Probability and Statistics

Class Information

Class webpage: <http://seaver-faculty.pepperdine.edu/dstrong/25F.141/index.html>
You'll find information, schedule, quiz/homework problems, handouts, exam dates, etc. at this site.

Text: Pearson's *Math 141 Digital Edition 2021*
Information on how to obtain a copy was sent in an email to everyone.

Prerequisites: C- or better in Math 140 or Math 150 or Calculus 1 in high school

Instructor Information

Instructor: David Strong
Email: David.Strong@pepperdine.edu
Office hours: Varies by day each week to hopefully accommodate your schedules—I'll keep you posted.

Pepperdine Mission

Pepperdine is a Christian university committed to the highest standards of academic excellence and Christian values, where students are strengthened for lives of purpose, service, and leadership. This course is designed to complement and supplement the overall mission of Pepperdine.

General Objectives for any Mathematics Course

- Develop your ability to think clearly, logically and abstractly.
- Learn to be more careful, focused and persistent.
- Learn to be more resourceful, independent and creative in finding ways to find solutions to problems.

Course Objectives for Math 141

Each student in Math 141 should:

- Discover how mathematics is used within many fields of study and learn to describe real- world problems using mathematical models. This includes translating a problem into a mathematical expression as well as interpreting equations in context.
- Model complex systems using functions of several variables and analyze how they change with respect to each variable.
- Learn to solve optimization problems with multiple variables and constraints.
- Learn basic counting principles and use them to calculate probabilities.
- Learn the basic principles of probability including events, sample spaces, random variables, conditional probabilities, expectation, and variance.
- Model large scale systems using linear equations and solve these systems.



“Why is it important for today’s kids to learn algebra? Because I had to learn this junk in school and now it’s your turn, that’s why!”

- Think more creatively about how to approach problems, decompose them into more manageable pieces, use various approaches to solve them, and then present the solution in a form consistent with the context.
- Develop the computational skills necessary to be successful in the Business Administration program which is quantitative in nature.

Specific Learning Outcomes for Math 141

Upon completing this course, students should be able to:

- Use partial derivatives to analyze rates of change with respect to individual variables.
- Optimize functions with respect to several variables and interpret the results in the context of the quantities they represent.
- Calculate basic probabilities using counting methods, trees and conditional probability.
- Solve linear systems using matrices.

General Education Learning Outcome

These learning outcomes fulfill the mathematics learning outcome of the general education program which states students should be able to:

- Provide examples that illustrate the beauty, creativity, and pervasiveness of mathematics.
- Demonstrate logical reasoning ability and problem-solving skills that employ mathematical strategies.
- Demonstrate an understanding of the creation, use, and limitations of mathematical or statistical models.

Daily quizzes, Homework

- There is no homework to turn in for this class. Instead, there will be a quiz each day on the previous day's material. More information will be shared on this in class.
- You are highly encouraged to discuss and work on the "homework" problems (aka potential quiz problems) with other students. You learn a lot when you talk about ideas with other people.



Exams

- There will be an in-class midterm exam following each chapter that we cover. The dates listed online at the class homepage are tentative and are subject to change (but right now I don't plan to).
- Most questions for exams will be similar to examples and homework problems from the textbook, so working on and understanding these problems is a great way to prepare for exams.
- If you have to miss an exam due to sickness, etc., it will be my choice of how you make up the exam.

Grading

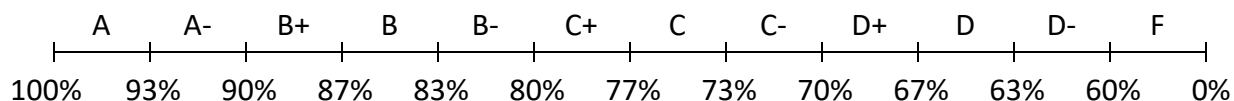
Your grade will be calculated based on the following weighting of scores:

20 % Quizzes

80 % Exams

That's it. Pretty simple. There are five exams worth 20% of your grade each, but your lowest midterm score will simply be dropped. So the four that end up counting are each worth 20% of your grade.

The "official" grade breakdown will be as follows:



I say the breakdown above is "official" because the above chart gives the guaranteed minimum grade that you will receive for a given total score for the class. I don't necessarily curve grades for the class, but if needed, I will curve in order to bring grades up a bit. For example, if no one in the class had a total score above 90%, then of course I would lower the cutoff for an A so that at least a portion of the class would receive an A (unless nobody really deserved an A, which is not likely). Any curving that is done will be done at the end of the semester—I don't curve individual exams or other parts of the course.

Other

- With anything you do in life, it's better to spend a little more time than you think you should or feel like you need to, rather than spending a little less time. This is certainly the case with a math class. Spending that little bit of extra time can make a huge difference in your success in and your enjoyment of this class. In college the rule of thumb is generally that for each hour in class, you should spend two to three hours outside of class. Remember, if you are willing to work, you will learn and enjoy the material, end up with a good grade, and enjoy the class a lot more.

Miscellaneous

- It has been suggested that all faculty include a note on academic integrity. Here is one suggested by the university, with which I agree.

Academic Integrity is the expression of intellectual virtue in human beings as a result of their creation in God's image. It represents the convergence of the best of the human spirit and God's spirit, which requires personal, private and community virtue. As a Christian institution, Pepperdine University affirms that integrity begins in our very created being and is lived out in our academic work. In order for the code to be effective, the community must maintain its health and vitality. This requires a genuine sense of maturity, responsibility, and sensitivity on the part of every member. In particular, each member of the Seaver College community is expected to pursue his or her academic work with honesty and integrity. Academic integrity is violated when one of the following events occurs: plagiarism, cheating, fabrication, or facilitating academic dishonesty. All violations will be reported and handled according to the Academic Integrity Committee Procedures.

- Other miscellaneous items, also provided by the university.

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Suggested approximate efforts needed to earn each grade

Grade	Time	Reading	Examples in textbook	Homework Problems
A	2+ hours a day	Read every section, usually twice	Be able to work most every example	Do every assignment, and find a way to find a solution to all (or most) problems.
B	1.5 hours a day	Read many of the sections once or twice	Be able to work many examples, and understand most of the other examples	Do most assignments, and work many of the problems, but often give up if they are too tough.
C	1 hour a day	Read some sections, usually just once	Be able to work some of the examples and understand many of the other examples	Do many assignments, and do some of the easier problems and sometimes attempt the tougher problems.
D	0.5 hour a day	Rarely read; don't try too hard to understand	Be able to understand some of the examples	Do some of the problems on some of the assignments.
F	I didn't even want to take this class—I'm not wasting my time on it!	We're supposed to read the book?	The book has examples?	I have to do homework, too? This class sure is demanding!

Success is 10% inspiration (talent, etc.) and 90% perspiration (hard work).

That which we persist in doing becomes easier—not that the nature of the task has changed, but our ability to do has increased.

The will to prepare is far more important than the will to win.