Math 256 Course Information

Prerequisite Completion of Math 171, and completion of Math 156 or Math 172.

Required Text There are two texts for the course:

- Notes on Discrete Mathematics, by G. Venema

- Ordinary Differential Equations: A Linear Algebra Perspective, by T. Kapitula

Course Content Selected sections in the textbooks. The first text will be used in the first four weeks, and the second text will be used for the remainder of the course.

Course Objectives We will learn the fundamentals of discrete mathematics and linear algebra. In particular, the student who successfully completes the class will be expected to:

1. construct proofs in (relatively) simple contexts

2. work with and apply functions and sets

3. know and apply basic ideas and theorems in elementary number theory

4. understand the method of mathematical induction

5. understand recursion, and how to represent functions and procedures recursively

6. use Gaussian elimination to solve linear systems

7. know what are vector spaces and subspaces

8. understand linear independence, basis, and dimension

9. understand inner products and orthogonal projections

10. know what are eigenvalues and eigenvectors, and their role in solving discrete linear dynamical systems.

Homework Policy Problems will be assigned regularly. I encourage you to collaborate with each other when doing the homework problems; however, each person must hand in the solutions in his/her own writing and words. One of the goals in doing the homework is to not only further develop your problem-solving skills, but to improve your ability to communicate mathematics. I must receive a hard copy of the assignment at the beginning of the class period in which it is due. I will not accept an electronic copy, and I will not accept late assignments. If you will not be in class the day the homework is due because of a prearranged conflict, it is your responsibility to get the assignment handed in to me before you leave.

Make-up Policy There will be no make-up exams. If you miss an exam, the score on the final will be substituted for the score of the exam.

Grading Policy The homework will be graded regularly. There will be three midterm exams, and a final exam. The points will be distributed as follows:

	Homework	Midterm Exams	Final Exam	Total
Points	100	300	150	550

The distribution of grades is not determined until the end of the semester. In a typical situation, the final distribution of grades will determine the cutoff point for A's, B's, etc. I can guarantee, however, that if your class average is **93** or better, then you will receive an A for the course.

Attendance Policy Your attendance is not mandatory; however, your likelihood of doing well is directly proportional to the number of lectures that you attend. If you decide not to attend, that is your business, but please do not then expect me to be sympathetic to your pleas for help the day before an exam is given.

Electronic Gadget Policy While you are free to use the technology of your choice while doing the homework problems, *you will not be permitted to use any technology when taking an exam.*

The classroom is a No Cell Phone Zone. You are not to use your cell phone to make phone calls, receive phone calls, or text message. Any violation of this policy will result in the deduction of three points from your final class average.