Description and learning outcomes:
This class will have two main topics. The first has to do with approximations. To this end, we will study sequences, series, power series and then finally Taylor series, which allow us to approximate a function by polynomials. The second major topic will be a beginning of studying functions of multiple variables and the relationship to geometry. We will study parametric equations, polar coordinates, vectors and vector–valued functions. This course will cover Chapters 8 – 11 of the textbook.

From the first part of the course, our goals are to have students understand the concepts and methods of analyzing convergence of sequences, series, and power series, and to be able to apply these in solving problems. From the second part, we expect students to be comfortable with manipulating changes of coordinates, vectors in the plane and in space, the cross product and the dot product, parametric equations for curves, and how these ideas interact with calculus. We also expect students to learn the basic concepts and terminology of linear algebra in the concrete setting of planar and spatial geometry.

Assessment: The course grade will be based on the following four items:

1. Three tests, held during class time. Tentatively, these will be held Friday, September 22nd, Friday, October 20th, and Friday, November 17th. Together, they will count for 50% of the course grade. You will be given at least one week’s notice if we need to change the date. The test questions will be similar in format to the examples in class and to the homework problems. These exams will test your ability to solve problems similar to those discussed in class. You will be required to show your work (and obtain a correct answer) to obtain full credit on a problem.

2. Comprehensive Final Exam — 30% of grade. (Wednesday, December 6th, 8 AM.)

3. Online homework, paper homework and Mathematica worksheets will be given throughout the term. The online homework will be announced and posted on MyMathLab. These will count towards 15% of the course grade. (Each homework assignment will count equally.)

4. The lowest midterm test grade will be replaced by the final exam percentage, if it is higher. The homework grade cannot be replaced.
5. Attendance policy: attendance will count for 5% of the course grade. Up to three missed classes will not be penalized. Each additional missed class will drop the attendance grade by a point. Attendance will be verified by the attendance scanner.

**Course Grading Scale**

- 93 - 100 %  A
- 90 - 92.9 %  A-
- 87 - 89.9 %  B+
- 83 - 86.9 %  B
- 80 - 82.9 %  B-
- 77 - 79.9 %  C+
- 70 - 76.9 %  C
- 60 - 69.9 %  D
- 0 - 59.9 %  F

**Policies**

**Test rescheduling:** Any student who will miss one of the midterm tests because of an official University function must reschedule and take this test at a time before the test is scheduled. No other rescheduling will be allowed.

Every student must take the final exam at the time scheduled. The only exceptions are those students affected by an official University function.

**Incompletes:** An Incomplete grade (grade of I) will not be given without the permission of the Department of Mathematics. If a test is missed for ANY reason, a grade of 0 will be given. There will be no make up tests given for ANY reason.

**Calculators:** There will be no calculators used during any test, exam, or in class assignment under ANY circumstances. Any student caught using a calculator or cell phone during a test, exam, or in class assignment will be considered cheating.

**Cheating:** The following statement is the policy of the Department of Mathematics regarding cheating:

- Offenses: Cheating on any exam or quiz, theft or attempted theft of exam questions, possession of exam questions prior to an examination, or the use of an illegal calculator on tests shall all be offenses subject to appropriate penalties.
- Penalties: The penalty for commission of any offense set out above is failure in the course and, subject to the approval of the Chancellor, dismissal or suspension from the University.

**Withdrawal deadline:** Monday, October 2nd.

After the Course Withdrawal Deadline, courses dropped will be recorded on University records and the grade of W will be recorded if the student is not failing the course at the time of withdrawal; otherwise, the grade of F will be recorded. After the course withdrawal deadline, a student may drop a course only in cases of extreme and unavoidable emergency, as determined by the academic dean. Dropping a course after the deadline will not be permitted because of dissatisfaction over an expected grade or because the student is changing his/her major.

**Academic needs:**

It is the responsibility of any student with a disability who requests a reasonable accommodation to contact the Office of Student Disability Services (915-7128). Contact will then be made by the Office of Student Disability Services through the student to the instructor of this class. The instructor will then work with the student so that a reasonable accommodation of any disability can be made.