MAT 162-003
CALCULUS WITH ANALYTIC GEOMETRY II
SPRING 2012
COURSE INFORMATION

INSTRUCTOR:	Dr. K. Spackman
OFFICE:	Bear Hall 132
PHONE:	962-3303
E-MAIL:	spackmank@uncw.edu
WEB ADDRESS:	people.uncw.edu/spackmank (This course information sheet is available now on my Web site. As the course proceeds, additional information and links will be added.)
OFFICE HOURS:	MTWRF 11:00-11:50 or by appointment. (Actually, I'm available at many other times. Check with me after class, by phone or e-mail, and we'll set up a mutually convenient time to meet.)
CLASS MEETINGS:	MWF 1:00-1:50 in BR 208 and TR 1:00-1:50 in BR 161
TEXT:	*Calculus: Early Transcendentals,* 7th ed., James Stewart, 2012 (bundled with a WebAssign access code that you will need)

LEARNING OBJECTIVES: Calculus is the mathematics of change--the scientific techniques to describe, analyze, explain and predict how one variable changes as one or more other variables on which it depends also change. Calculus was invented about 300 years ago to treat problems in physics and astronomy, but applications of calculus now extend to such diverse areas as biology, business, chemistry, computer science, geology and medicine, to name just a few.

In this course we will continue the study of calculus by extending the ideas and methods you studied in Calculus I. This includes techniques of integration, applications of integration, parametrized curves, polar coordinates, conic sections, infinite series, and an introduction to differential equations. There are eight learning objectives for the course: by the end of the course, you will be able to:

- Use graphical, numerical, analytical and verbal representations of integrals, differential and parametric equations, sequences and infinite series.
- Use techniques of integration and differential equations to solve a variety of problems.
- Use calculus to understand the properties of conic sections and other curves in polar and parametric form.
- Understand convergence properties of sequences and series.
- Use correct mathematical syntax to explain solutions in both written and graphic forms.
- Model physical situations using the concepts of calculus.
- Use technology to help solve problems, experiment, interpret results, and verify and communicate conclusions.
- Determine the reasonableness of solutions, including sign, size, relative accuracy, and units of measurement.

Achievement of these objectives will require each student to solve lots of problems. To be successful, you should plan to spend about 10 hours each week *outside of class* doing calculus problems.

COURSE CONTENT: We will cover the following sections of the textbook, in this order: 7.1 – 7.8, 8.1 – 8.3, 10.1 – 10.6, 11.1 – 11.10, 9.1 – 9.5, 17.1.

COMPUTER AND CALCULATOR USE: Because we will make extensive use of computers, we meet twice a week in BR 161 where each student will have their own PC. The principal software tool is

MAPLE, a powerful symbolic manipulation program capable of performing sophisticated calculations and visualization. You are not expected to know how to use *MAPLE* prior to this course; full instruction will be given on its use. MAPLE can also be accessed anywhere you have an Internet connection—more about that later. The purpose of using *MAPLE* in this course is simply to help you understand calculus better. The aim is to do this by helping you to:

1. visualize graphs and other calculus concepts;
2. provide alternative explanations of concepts;
3. do calculations which are difficult or impossible (or error-prone) when attempted by hand; and
4. give you "hands-on" control of your own learning.

You probably already own a graphing calculator. Even though not required, you may find it useful for portions of the course. But you will soon realize how much more powerful *MAPLE* is.

HOMEWORK AND QUIZZES: Suggested homework will be assigned at the end of each class. Weekly homework assignments will be done on the Web (in WebAssign) and will contribute to your final grade. Short, unannounced quizzes and graded in-class worksheets may also be given occasionally. There will be no make-up quizzes or graded in-class worksheets for any reason.

TESTS: There will be two kinds of tests: "lab tests," taken in BR 161, that require the use of the computer, and "regular tests," taken in BR 208, that are done by hand. The lab tests will be about 15-20 minutes in duration, and the regular tests will last 50 minutes. There will be five regular tests (tentatively scheduled for Feb. 1, Feb. 20, Mar. 9, Apr. 4 and Apr. 25). There will be six lab tests on dates to be determined later. Exact dates of all tests will be announced at least one week in advance. Ordinarily, no make-up tests will be given. If you foresee that you cannot avoid missing a test, notify me before the missed test. The final exam will be given on Thursday, May 3, 2012, from 11:30 am until 2:30 pm in BR 161; it will be comprehensive.

ATTENDANCE: Attendance at each class is expected. Absences must be kept to a minimum for success in the course.

GRADING: Regular tests are worth 100 points each. Lab tests are worth 20 points each. Your final grade will be determined according to the total number of points you accumulate by adding your <u>four best</u> regular test scores (total possible: 400 points), your <u>five best</u> lab test scores (total possible: 100 points), your combined homework-quiz score (total possible: 100 points), and your final exam score (total possible: 200 points). Thus each of your four best regular tests, your combined lab tests, and your homework-quiz score each count one-eighth of your final grade. Your final exam contributes the remaining one-fourth. The letter-grading scale is determined separately for each regular test based on test difficulty and score distribution. The letter-grading scale for the combined lab tests and homework-quiz score is: 90-100, A; 80-89, B; etc. The letter-grading scales of all of the grading components are added to produce the letter-grading scale for translating point totals to final grades.

PLUS/MINUS GRADING: A plus or minus will be used as a possible grade modifier for final grades <u>only</u>, at the end of the semester. Factors that influence the judgment to assign a + or - (or neither) are: performance on the final exam, consistency of performance throughout the semester, proximity to a grade borderline, class participation and effort.

INCOMPLETES: A grade of I (incomplete) is given only if documented circumstances beyond the student's control (e.g., medical, legal) render the student unable to complete the course work and only if there is a reasonable possibility of passing the course. The grade I is not given for simply failing to meet the course requirements.

ACADEMIC HONESTY: Collaboration and discussion is encouraged on "suggested homework" problems. Homework assigned in WebAssign must be done individually; that work must be your own. All tests are to be done without collaboration and without the aid of books or notes; calculators of any type are permitted and the lab tests will require individual use of the computer. The Academic Honor Code (see the UNCW Code of Student Life) applies at all times, and rests on this principle: "It is … this institution's stated policy that no form of dishonesty among its faculty or students will be tolerated." All students are expected to read and abide by the Academic Honor Code.

MATH LAB: The Math Lab http://www.uncw.edu/ulc/math/index.html provides tutoring for all mathematics and statistics courses, including MAT 162. The Math Lab is open Sunday 2-9pm, Monday through Thursday 9am-9pm, and Friday 9am-2pm. Math Services also offers one-on-one appointments and students can set their own appointments at: http://www.uncw.edu/ulc/appointmentinstructions.html

STUDENTS WITH DISABILITIES: If you have a disability and need reasonable accommodation in this course, you should inform the instructor of this fact in writing within the first week of class or as soon as possible. If you have not already done so, you must register with the Office of Disability Services in DePaolo Hall, 1st floor (extension 962-7555) and obtain a copy of your Accommodation Letter. You should then meet with your instructor to make mutually agreeable arrangements based on the recommendations of the Accommodation Letter.

CELL PHONES, TEXTING, ETC.: Please place cell phones and pagers on silent mode during class. Please don't read messages, text, tweet, surf or post during class.

CAMPUS SAFETY: If you, or someone you know, ever feel unsafe for any reason, go to this Web site for campus resources available to help: http://uncw.edu/emergencyandsafety/ForStudents.html UNCW practices a zero-tolerance policy for violence and harassment of any kind. For emergencies contact UNCW CARE at 962-2273, or dial 911 (for Campus Police or Wilmington Police). For additional University or community resources visit http://www.uncw.edu/wsrc/crisis.html.

RELIGIOUS OBSERVANCE POLICY: In accordance with North Carolina G.S. 116-11(3a), you are entitled to two excused absences for religious observances per academic year. In order to preserve your right to make up any tests or other work missed for religious observance required by your faith, you must inform the Registrar in writing of your intended absence before the end of the first week of class.

IMPORTANT DATES:

Wednesday, Jan. 18	Last day to drop without a grade.
Tuesday, Feb. 28	Last day to withdraw with a W.
Thursday, May 3	Final Exam.