Calculus III   **Syllabus**
MAT 203 – G11   Spring, 2012
CRN

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Text: Calculus by Stewart, 6th Edition
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Course Website:
1. Login at http://www.aims.edu/student/index.php
2. Click on **My Courses** tab.
3. Select this course from the list.

Please see the Course Website for this syllabus, course calendar, assignment list, lecture notes, practice tests, and other information..

Course location: Ed Beaty

Catalog course description and prerequisites: Completes the traditional subject matter of the Calculus. Topics include vectors, vector-valued functions, and multivariable calculus including partial derivatives, multiple integrals, line integrals and applications. GT-MA1 Prerequisite: MAT 202.

Grades:

Grading:			Grading scale:	
4 Chapter Tests:	60%		90%-100%	A
Final Test:	20%		80%-89%	B
Homework:	20%		70%-79%	C
			60%-69%	D
			Below 60%	F

Chapter Tests: Your Test Grade is the average of your Test Scores (as a percent). I will drop the lowest Test Score.

Final Test: At the end of the course, there will be an in-class Final Test, at a specific time to be announced. Your Final Test Grade will be figured as a percent.

Homework: Virtually every day, you will submit (well-)written homework.
Each assignment is worth 10 points. Late Work 5 points, tops.

I will typically grade 3 or 4 exercises, worth 2 or 3 points, each.

Context of the questions – 2 points per assignment. (*Someone reading your work shouldn't need to open the book to know what's being asked and how it was answered.*)
Solid supporting work (clear, complete) – 1 point per exercise
Correct Answer – 1 point per exercise

I will ***not*** grade work that...
● ... is written on the *back* of the homework pages. (I'm a grade-one-side-only guy.) This does NOT mean you will squeeze an entire assignment onto one page. When you use multiple pages, you will just use one side of each page.
● ... is sloppy or illegible.
● ... has a staple through it. (*Leave an inch at the top! Staple the **corner**!*)
● ... has problems out of order. (I won't go chasing around looking for exercises. If you get stuck on a problem, start a fresh piece of paper.)

There are approximately 60 assignments. That's 60 opportunities to earn the full 500 points on which your homework grade will be based. Most hard-working students will earn the full 500 points. It is not possible to pad your grade by earning more than 100% on homework. But you can secure 100% for this category with a week or three of class left over..

Grades Miscellany:
Incomplete "I": You must successfully complete 75% of the course *and* have a compelling reason for an Incomplete.
Add/Drop: Last day to Add/Drop this course is January 28th.
Withdraw "W": The Grading System definition of a W is: "WITHDRAWAL: Indicates withdrawal from the course. Last day to withdraw is April 10th. No Ws given after that date!
Audit Grade: See the catalog. The student must obtain instructor approval by the Drop/Add deadline for the course.

Outlines: The Art of the Looseleaf Notebook:
● Any boxed item, such as a Theorem or any prominently displayed equation should be written down at the top of its own page in your notebook. The rest of that page is for examples and discussion related to that theorem or equation.
● If you've been tricked into buying a spiral notebook, you might want to go every-other page, with an entire blank page *after* the page with the theorem at the top.
● Immediately jot down your thoughts on the theorem, and/or state the essentials of the example that goes with the theorem. You don't have to understand it, to do this much, although often you *will*.
● So far, you haven't done *anything* that really forces you to stop and think. It's the sort of stuff you can do like a machine, for 10 to 30 minutes that makes you better in class and more efficient working the homework after class.
● The more you do this sort of pre-class work, the better you'll get at teaching yourself. What I'd love to see happen is for everybody to just have a few questions to ask about the homework, and all we'll have to do is talk about problems.

Before **Class:**
● Always read the next section before class. The Course Outline pretty much tells you what's next (In general, we're starting @ 13.1 and proceeding through 17.9, without pause.)
● Jot down the theorems and definitions that will be covered. Build a sparse outline of the section on looseleaf paper. I punch holes in copier paper, myself. That way, I can always insert pages, if the notes go long in between theorems. But a page per theorem, to start with.

● These are things that I won't stop for people to write down. I'll display them, and usually read most of them out loud, but I want to talk *about* them and *use* them. You want to be free to write down the *comments* I make, in the limited time we are together, and not be scrambling to write down the theorems for the first time, when I'm racing to the punchline.

● Attempt a few exercises, to see what you're up against. It's amazing what a nice, half-hour run-up to the assignment can shave time off the back-end of *finishing* the assignment. Give yourself 2 sittings on every topic, and 3 sittings on topics that extend for 2 lectures.

● Budget some time to ask questions 1-on-1 (or in groups) in my office. While I am happy to answer a few homework questions, I *still* collect the homework at the beginning of class. *Right* before class (11-ish) is a popular time. If we get "too big," I will shift one or more office hours to a classroom.

After **Class:**

● Start the homework as soon as possible.

● Any exercise you can't do, start a whole new piece of paper and continue with the exercises. *Don't spend too much time on a problem that's a challenge. Instead, write down a few ideas about it, and move on!!!*

● Complete any self-assessments I've assigned. These might very well be the most valuable learning experiences you have during the semester.

Make-up test: I don't like doing make-up tests. Instead, I will drop your lowest test score.

Calculators: A scientific calculator is required for this class. A graphing calculator is recommended but not required. (Homework problems requiring a graphing calculator may be done using an online grapher instead.) Unless otherwise specified in class, calculators are to be used only to calculate: add, subtract, multiply, divide, and calculate logs, roots, powers, trig functions and factorials. You will be required to show all other work on homework and tests. I will not give credit for answers given without work shown. Graphing calculators are not allowed on tests; you will want a simple calculator for use on tests, *and you will need to know how to use it*. Cell phones are not allowed on tests, even if they have a built-in calculator.

Academic Honesty: You may get help with your homework, but work on a test is to be yours alone. You will not be given credit for any work that appears to be dishonest. (This includes copying, cribsheets, use of graphing calculators or cell phones, corrections made after the test is graded, as well as any other unauthorized source of information.) If there is a pattern of such work on a test, you will receive a grade of 0 on that test. If I have misjudged you in such an instance, please come and talk to me.

Student Conduct: (Aims Policy Manual #5-601) (see the college website for additional information about this policy): Students are expected to practice academic honesty. Each student is responsible for contributing to a positive learning environment in classroom situations. Students who conduct themselves contrary to the best interest of the class as a whole may be dropped from the roster. Students should refrain from expressing derogatory opinions concerning race, gender, ethnicity, disability, sexual orientation, or any other personal characteristic, and should avoid using obscene language. They must refrain from any form of cheating, plagiarism, or knowingly furnishing false information to the college.

Because respect for the learning process is critical, no behavior that disrupts another student's ability to learn will be tolerated. The first example of such behavior will result in a warning. The second incident will result in expulsion.

Cell Phone Policy: If you have a cell phone with you in the classroom, make sure the ringer or beeper is off unless you are expecting a call due to an emergency situation. In that case you must inform the instructor in order not to disrupt the class unexpectedly.

Children on Campus: (Aims Policy Manual #3-600) (see the college website for additional information about this policy): All children on campus under the age of sixteen (16) must be under the direct supervision of a parent or legal guardian unless they are involved in a specific College approved and supervised activity.

Tutoring: Tutoring is available to qualified students. Interested students should drop by Horizon Hall 311 or call 970-339-6541 for further information.

DISABILITY ACCESS CENTER: Any student who feels s/he may need an accommodation based on the impact of a disability should contact Disability Access Services (DAS) privately to discuss her/his specific needs. Please be aware that before accommodations can be allowed in class they must be approved through the DAS Office. Students should contact DAS at 970-339-6251 or disabilities@aims.edu to set up an appointment to discuss the process of requesting reasonable accommodations. The DAS Office is located in the College Center.

General Education Competencies: This course satisfies the following State GE categories: Critical Thinking, Technology, and Mathematics.

STANDARD COMPETENCIES:

I.   Solve problems involving curves defined parametrically which involves slope and area.
II.   Demonstrate vector arithmetic
III.   Describe the difference between scalars and vectors geometrically and algebraically
IV.   Demonstrate the ability to work with vector valued functions. This includes limits, continuity, derivatives, and integrals
V.   Solve problems involving velocity and acceleration
VI.   Solve problems involving the unit tangent and unit perpendicular vector, the unit binomial vector, curvature and tangential and normal components of acceleration both in two space and three space.
VII.   Demonstrate the ability to graph in three dimensions, and know the formulas of basic three dimensional objects such as spheres and planes.
VIII.   work problems involving the dot and cross product.
IX.   Demonstrate an understanding of the interpretation of these operations.
X   work problems of the line in three space both symmetrically and parametrically.
XI.   Identify the 6 basic different surfaces in three dimensions. These surfaces are the ellipsoid, hyperboloid of one and two sheets, elliptic paraboloid,hyperbolic, paraboloid ,and elliptic cone.

XII.   Relate problems in the rectangular coordinates to the cylindrical coordinates to the spherical coordinates.

XIII.   Apply the concept of the partial derivative

XIV.   understand the concept of differentiability and its relationship to the gradient. This includes working problems involving these concepts.

XV.   demonstrate an understanding of the directional derivative, level curves and level surfaces.

XVI.   Solve problems involving the chain rule for many variables.

XVII.   demonstrate the ability to work problems involving maxima and minima both with the second partials test and Lagrange¿s method.

XVIII. Demonstrate the ability to work with the double and triple integral and understand applications. The student will also understand the use of the surface area integral.

XIX.   Demonstrate knowledge of vectors fields, the potential function, and the divergence and curl of a vector field.

XX   Show proficiency with the line integral and independence of path.

XXI.   Demonstrate ability to do problems involving surface integrals.

XXII.   Demonstrate knowledge of the theorems of Green, Gauss, and Stokes and applying the theorems.

XXIII. Demonstrate a basic knowledge of linear algebra.

Existing students in current courses should use the Mail Tool on their respective Course Websites in WebCT.