MATH 2413   CALCULUS I   Spring 2011

MW 7:05 - 8:50 pm ~ RGC1 336 ~ Synonym/Section 25073/011
TTh 5:15 - 6:55 pm ~ RVSG 8131 ~ Synonym/Section 25078/016

Instructor: Merianne Prickett	**Office Hours/Location:**
Office: RGC 215.2	RGC 215.2: MW - 1:30-2:00pm, 6:30-7:00pm
Office Phone: 223-3291	TTh - 3:15-3:45pm
E-mail: mpricket@austincc.edu	RVS 9128: TTh 5:00-5:15pm, 6:55-7:10pm
Web Page: www.austincc.edu/mpricket	Other times by appointment

✦**COURSE DESCRIPTION**
MATH 2413 CALCULUS I (4-4-0). A standard first course in calculus. Topics include inequalities; functions; limits; continuity; the derivative; differentiation of algebraic functions and trigonometric functions; Newton's method; applications of the derivative; the integral; integration of algebraic functions and the sine and cosine functions; numerical integration; and applications of the integral. Prerequisites: MATH 2412 with C or better or equivalent. Another option is an appropriate secondary school course (one year of precalculus or the equivalent, including trigonometry, with a B or better) and a satisfactory entrance score on the ACC Mathematics Assessment Test.

✦**REQUIRED TEXTS/MATERIALS**
Required: The required textbook for this course is:

Calculus: Concepts and Contexts, 4th ed., by James Stewart, Brooks/Cole 2010. The text is sold in a full version and a shortened version -- the "Single Variable" version. Either may be used for Calculus I and II. Students who will go on to Calculus III will need the full version.

Technology required: You must have access to technology which enables you to (1) Graph a function, (2) Find the zeroes of a function. A graphing calculator is highly recommended. There will be calculators available for use in class, and there are calculators you may borrow in the libraries on all campuses. You may find it convenient to buy one for use at home. Most ACC faculty are familiar with the TI family of graphing calculators. Hence, TI calculators are highly recommended for student use. Other calculator brands can also be used.
Optional: *Student Solutions Manual, Single Variable ISBN* 0-495560618 by Jeffrey A. Cole
 Study Guide ISBN 49556064 by Dan Clegg
Scientific Notebook software, single version, *Doing Calculus with Scientific Notebook,* by Daniel W. Hardy, Carol L. Walker.

✦**INSTRUCTIONAL METHODOLOGY**
This course is taught in the classroom primarily as a lecture/discussion course.

✦**COURSE RATIONALE**
This course is the first course in the traditional calculus sequence for mathematics, science and engineering students. It is part of what could be a four-semester sequence in calculus courses. The approach allows the use of technology and the rule of four (topics are presented geometrically, numerically, algebraically, and verbally) to focus on conceptual understanding. At the same time, it retains the strength of the traditional calculus by exposing the students to the rigor of proofs and the full variety of traditional topics: limits, continuity, derivative, applications of the derivative, and an introduction to the definite integral.

✦COURSE EVALUATION/GRADING

Grading: The total number of points you may earn this semester is 650. Final grades will be assigned as follows:

A	**585-650 points**
B	**520-584 points**
C	**455-519 points**
D	**390-454 points**
F	**Below 390 points**

Incomplete Grade Policy: Incomplete grades (I) will be given only in very rare circumstances. Generally, to receive a grade of "I", a student must have taken all examinations, be passing, and after the last date to withdraw, have a personal tragedy occur which prevents course completion.

Exams: There will be 4 regular exams (100 points each). There will be a comprehensive Midterm worth 150 points. Your Midterm grade (in percentage form), if higher, can be used to replace the lowest grade of your first 3 regular exams.

Missed Exam Policy: **NO MAKEUP EXAMS WILL BE GIVEN FOR TESTS ADMINISTERED IN THE TESTING CENTER.** If you miss an exam given in class, it is your responsibility to contact me <u>before</u> the next class meeting to schedule a make-up exam. For one exam only (of the first 3 exams), if you do not take it, a zero will be recorded and you will be required to count your comprehensive midterm score in its place.

Homework, Quizzes, and In-Class Activities: There will be several graded homework assignments. quizzes and in-class activities. Your percentage of points earned out of points possible for these assignments will be converted to a 100 point homework grade.

Text homework will be collected weekly – these assignments will be graded for completion, and several problems will be chosen to be graded for correctness. The remaining homework, quiz and activity points will come from specific supplemental assignments and activities given throughout the course. You must show all work on all assignments. No credit will be given for writing only the answers. ***Note that your cumulative homework grade has the same value as a test grade. Please do not take these assignments lightly.**

Late Work: **NO LATE HOMEWORK WILL BE ACCEPTED AND NO MAKE-UP ACTIVITIES WILL BE GIVEN**. If you miss class on the day that homework is due, you must make arrangements to get it to my campus mailbox by the time class starts. Someone in the mailroom will date/time stamp your paper and put it in my mailbox. Do <u>NOT</u> put assignments under my office door as the cleaning staff may mistake it for trash. If you miss an in class activity, you must contact me to see if it is something you can do at home.

✦OTHER COURSE POLICIES

Attendance: Attendance is required in this course. See me, call me, or send an e-mail if an absence is unavoidable. **You are responsible for any material covered and any assignments due and/or given during the class that you miss.** Students who miss more than 4 classes may be withdrawn, but I make no promise to do so.

Participation: Students are expected to be present and to participate fully in all discussions and in-class activities.

Cell Phones: In order to enhance learning, please keep cell phones in a silent mode during class. If you must answer an emergency call, please leave the classroom quietly prior to answering.

Withdrawal Policy: If you choose to withdraw or stop attending, it is your responsibility to fill out the necessary paperwork at the Admissions Office. I have the right to withdraw students for excessive absences (4), but I make no commitment to do so unless required by law or ACC policy. After the withdrawal date, neither the student nor the instructor may initiate a withdrawal. The last day to withdraw from any 11-week course this semester is ***Monday, April 25, 2011.***

Reinstatement policy: Students who withdraw or are withdrawn generally will not be reinstated unless they have completed all course work, projects, and tests necessary to place them at the same level of course completion as the rest of the class. After the last day to withdraw, neither the instructor nor the student may initiate reinstatement into the course.

✦**COMMON COURSE OBJECTIVES:** http://www2.austin.cc.tx.us/mthdept2/tfcourses/obj2413.htm

MATH 2413 Calculus I - Objectives

1. Find limits of functions (graphically, numerically and algebraically)
2. Analyze and apply the notions of continuity and differentiability to algebraic and transcendental functions.
3. Determine derivatives by a variety of techniques including explicit differentiation, implicit differentiation, and logarithmic differentiation. Use these derivative to study the characteristics of curves. Determine derivatives using implicit differentiation and use to study characteristics of a curve.
4. Construct detailed graphs of nontrivial functions using derivatives and limits.
5. Use basic techniques of integration to find particular or general antiderivatives.
6. Demonstrate the connection between area and the definite integral..
7. Apply the Fundamental theorem of calculus to evaluate definite integrals.
8. Use differentiation and integration to solve real world problems such as rate of change, optimization, and area problems.

Appropriate use of technology will be encouraged throughout the course.

✦**TESTING CENTER POLICY**
ACC Testing Center policies can be found at: http://www.austincc.edu/testctr/

✦**STUDENT SERVICES**
 The web address for student services is: http://www.austincc.edu/support
The ACC student handbook can be found at: http://www.austincc.edu/handbook

✦**COURSE-SPECIFIC SUPPORT SERVICES**
- ***Lab Course:*** Sometimes sections of MATH 0187 are offered**.** This lab is designed for students currently registered in Calculus I MATH 2413. It offers individualized and group setting to provide additional practice and explanation. This course is not for college-level credit. Repeatable up to two credit hours.
- ***Learning Lab:*** ACC main campuses have Learning Labs that offer free first-come first-serve help with math from tutors and computer tutorials for mathematics courses. The locations, contact information, and hours of availability of the Learning Labs are available at www.austincc.edu/tutor.
- ***DVDs:*** The Learning Resource Centers (libraries) have DVDs that cover all topics for many ACC math courses. These DVDs are recommended for students who miss class. Check with the library for availability of DVDs for your course.

✦ACC STATEMENTS AND POLICIES

STATEMENT ON SCHOLASTIC DISHONESTY

Acts prohibited by the college for which discipline may be administered include scholastic dishonesty, including but not limited to, cheating on an exam or quiz, plagiarizing, and unauthorized collaboration with another in preparing outside work. Academic work submitted by students shall be the result of their thought, work, research or self-expression. Academic work is defined as, but not limited to, tests, quizzes, whether taken electronically or on paper; projects, either individual or group; classroom presentations; and homework.

STATEMENT ON SCHOLASTIC DISHONESTY PENALTY

Students who violate the rules concerning scholastic dishonesty will be assessed an academic penalty that the instructor determines is in keeping with the seriousness of the offense. This academic penalty may range from a grade penalty on the particular assignment to an overall grade penalty in the course, including possibly an F in the course. ACC's policy can be found in the Student Handbook under Policies and Procedures or on the web at: http://www.austincc.edu/handbook

STATEMENT ON STUDENT DISCIPLINE

Classroom behavior should support and enhance learning. Behavior that disrupts the learning process will be dealt with appropriately, which may include having the student leave class for the rest of that day. In serious cases, disruptive behavior may lead to a student being withdrawn from the class. ACC's policy on student discipline can be found in the Student Handbook under Policies and Procedures or on the web at: http://www.austincc.edu/handbook

STATEMENT ON ACADEMIC FREEDOM

Institutions of higher education are conducted for the common good. The common good depends upon a search for truth and upon free expression. In this course the professor and students shall strive to protect free inquiry and the open exchange of facts, ideas, and opinions. Students are free to take exception to views offered in this course and to reserve judgment about debatable issues. Grades will not be affected by personal views. With this freedom comes the responsibility of civility and a respect for a diversity of ideas and opinions. This means that students must take turns speaking, listen to others speak without interruption, and refrain from name-calling or other personal attacks.

STATEMENT ON STUDENTS WITH DISABILITIES

Each ACC campus offers support services for students with documented physical or psychological disabilities. Students with disabilities must request reasonable accommodations through the Office of Students with Disabilities on the campus where they expect to take the majority of their classes. Students are encouraged to do this three weeks before the start of the semester. Students who are requesting accommodation must provide a letter of accommodation from the Office of Students with Disabilities (OSD) at the beginning of the semester. Accommodations can only be made after I have received the letter of accommodation from OSD.