Math 111: A Short Course in Calculus  
UWEC Spring 2007  
SECTION 005  
MEETS IN HHH 309 FROM 11AM-11:50AM MT ThF

1. INSTRUCTOR

Your instructor for the course is Professor Alex Smith. The best way to contact me is by email: smithaj@uwec.edu.

You may also contact me by phoning 836-2519. My office is Hibbard Humanities Hall 532. I have my office hours posted on my curricular page

http://www.uwec.edu/smithaj/curricpg.html

2. COURSE DESCRIPTION

This four-credit course is primarily for students in biology, business, economics, psychology, and sociology and covers functions, limits, continuity, derivatives, integrals, and applications.

3. PREREQUISITE

The prerequisite is Math 109, ALGEBRA FOR CALCULUS. Your background in algebra should include polynomial and rational expressions, linear and quadratic equations, inequalities, absolute value, functions and graphs, exponential and logarithmic functions, and zeros of polynomials.

4. COURSE REQUIREMENTS AND MATERIALS

- The textbook for the course is CALCULUS: APPLICATIONS AND TECHNOLOGY (Brooks/Cole, third edition) by Edmond Tomastik.
- A graphing calculator is not required. If you have a graphing calculator and are comfortable using it, please feel free to do so.

5. COURSE OBJECTIVES

(a) UWEC Baccalaureate Goals

- Ability to inquire, think, analyze
- Understanding of numerical data

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1 Or a grade of B or above in MATH 108, or three years of above-average work in college-prep MATH and a suitable mathematics placement test score.
These two baccalaureate goals are achieved by the elements following mathematical component of the course.

(b) Mathematical Component

- Students will become familiar with the following conceptual and theoretical constructs of calculus
  - Limit
  - Derivative
  - Definite Integral
  - Indefinite Integral
- Students will employ algebra to calculate limits, derivatives and integrals in the class of functions including polynomials, rational functions, exponential functions and logarithmic functions
- Students will understand connections between theoretical constructs of calculus and generic applications such as rates of change, linear approximations, optimization problems, curve analysis by derivatives, marginals, and estimating net changes such as distance traveled.
- Students will apply calculus concepts to real-word situations extracted from current journals in various fields. In the application, students will learn to
  - recognize and apply the appropriate calculus technique needed to analyze the situation
  - explain conclusions and limitations of their analysis

(c) General Education Component

This course is in the UWEC GENERAL EDUCATION CATEGORY IB. The General Education program is provided to help each student attain the basic competencies, breadth of knowledge, and critical judgment which characterize a mature and responsible individual in the modern world. More specifically, the program is designed to:

i. stimulate and direct learning throughout life;
ii. provide exposure to methods of understanding past, current, and future;
iii. promote active learning and a critical response to what is read, heard, and seen; and
iv. broaden individual perspectives and emphasize relationships among the fields of study.
Category IB is the Communications category. Language skills afford a powerful means of discovering both ourselves and our world, allowing us to preserve and ponder our experience, to shape and reshape it. Enhanced language ability serves as a catalyst for intellectual and emotional growth. Analytical skills provide the foundation for expressing logical and mathematical relationships, giving us basic tools with which to solve the ordinary as well as the technical problems in life.

6. Course Policies and Student Expectations

Participation is expected to be continuous throughout the course, and assignments are to be completed by their due dates. Late assignments will not be accepted. We will cover twenty sections in the textbook, each of which will have a MapleTA assignment. There will also be four chapter exams, a final exam and three application assignments. Due dates are posted on the course calendar found in D2L.

(a) MapleTA Policies

You will be given class time to work on MapleTA section assignments. In class you will work in groups of three on these assignments. If you are not satisfied with the grade you get while working in class you may continue to work on the assignment after class on your own time. You may work the assignment as many times as you wish up to the due date. The highest grade will be then recorded into the D2L gradebook.

MapleTA does on occasion incorrectly grade a question. If you think a question has been graded incorrectly by MapleTA, you may appeal the grading. The appeal should contain the name of the assignment, the date/time stamp, and the question number. Appeals are due no later than 24 hours after the assignment due date.

Frequently students enter an answer into MapleTA and make a syntax error such as incorrectly placed or omitted parentheses. For example, suppose the correct answer is $\frac{5}{x+1}$ and you enter $\frac{5}{x}+1$. This will be understood as $\frac{5}{x}+1$, and thus will be graded incorrectly. This type of error will not earn any points on an appeal! In order to minimize this type of error it is expected that you will make appropriate use of the MapleTA answer preview window and/or the symbolic entry mode instead of the text entry mode. In any case, before making an appeal, it is expected that you will first think critically about your answer and the correct answer as returned by MapleTA.

On occasion, MapleTA will deliver questions that are “blank” or “duds.” Before working on the assignment, look over the questions to be sure that all the questions

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2The instructor wrote the questions and grading algorithms, and sometimes the grading algorithms have errors.
have been delivered properly. If there are defective questions, simply have the system grade the assignment with the answers left blank, and generate a new assignment. It is your responsibility to do this. Do not expect the instructor to award appeal points on an assignment that has defective questions.

(b) Exam Policies
When working an exam, you may use your textbook, printouts of your MapleTA assignments, and a graphing calculator. You may not receive help from other people, including internet resources, on an exam.

(c) Policies for Application Assignments
These three assignments will be based on exercises selected from the Applications and Mathematical Modeling exercises in the textbook. Many of these exercises are about situations extracted from current journals. You will work on these assignments in a team of up to three students.

Your team will need to produce a document that might require equations, graphs and careful explanations and wording. You should be able to do this in Microsoft Word and Excel. Submit only one assignment per team. Upon submission of the assignment, each team member must email me acknowledging that they have participated fully in the assignment. If you have any reservations or concerns about the participation of other team members, you should express this in this email.

(d) Other Policies
i. Any student who has a disability and is in need of accommodations is expected to contact the instructors and the Services for Students with Disabilities Office in Old Library 2136 at the beginning of the course.

ii. Any academic misconduct in this course is a serious offense, and the instructors will pursue the strongest possible academic penalties for such behavior. The disciplinary procedures and penalties for academic misconduct are described in the UW-Eau Claire Student Services and Standards Handbook in the section titled, “Chapter UWS 14–Student Academic Disciplinary Procedures.”

7. Grading Policy
You can expect that I will use the grading policy outlined below to form an objective assessment of each individual’s performance in the class. If you have performed to the
best of your capabilities, then you can expect that I will notice this, and in the future you should feel comfortable asking me for a letter of recommendation.

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<td>Attendance on non-Exam days</td>
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<td>2%*</td>
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<td>MapleTA</td>
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<td>Application Assignments</td>
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<td>Midterm Exams</td>
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* Capped at 10%.

** Drop Lowest. Credit earned on the lowest of the three Application Assignments may be applied as “extra credit” to offset missed points on MapleTA assignments, exams and Discussion Assignments.

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