MATH 122 Section 1
University Calculus I
Fall 2010

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*While these are the official office hours, I am available at other times as well. If you want to meet at a time outside of office hours, the best option is to set up an appointment with me. You can also just drop by any time, but you may want to call or email first to see if I'm there.

Textbook. James Stewart. *Calculus: Early Transcendentals*, **Sixth** Edition. Brooks/Cole, 2008.

Technology. 1) A TI-eightysomething graphing calculator is strongly recommended. The particular model (83, 84, 86, or 89) is not important. (Calculators might not be allowed on certain assessments, and, when they are, you will still be required to show work.)

2) You must get access to your WebAssign account—see the course web page.

Prerequisite. MATH 106 (University Precalculus) **or** four years of college preparatory mathematics.

Catalog Description. Functions, inverse functions, limits, continuity, derivatives, indeterminate forms, antiderivatives; applications to rectilinear motion, graphing, maxima-minima, related rates; computational technology. **Credit will not be given for both MATH 120 and MATH 122.**

This course satisfies the Mathematics/Quantitative Reasoning requirement of the College Core Curriculum.

Course objectives. The purposes of this course for the student include (1) Developing an understanding of the fundamental definitions and concepts of differential calculus, (2) Developing computational skills in differential calculus, (3) Improving reasoning, critical thinking, and problem-solving skills, (4) Sampling some of the many application areas of continuous mathematics, (5) Acquiring an appreciation of the concepts that form the foundation of twenty-first century science and technology, and (6) Learning to communicate mathematical ideas, arguments, and results. **Strong communication skills are crucial in most mathematics-intensive vocations. We will place special emphasis on clear communication of mathematical ideas.**

Expected results. Our course web page includes a link to the departmental master syllabus for MATH 122. See the "Objectives" section of this master syllabus for a list of abilities you should expect to develop and concepts you should expect to learn by the end of this course. This is more detailed and extensive than the list of course objectives given above.

Content and Methodology. The course will cover most of the material in the first four chapters of the text. Typically, we will cover a section of the text in one to two meetings. The beginning of each class period will be reserved for discussion of the homework and other questions. Up to 1/3 of the period may

be used for this purpose. Most of the remaining time will be used for presentation of new material. Sometimes the instructor will lecture. At other times students will present examples. Students are encouraged to ask questions and make relevant comments at any time. There will be brief quizzes, as well as group work and some other fun activities to whatever extent possible.

Homework and quizzes. Homework will be assigned from each section. **Do the homework! How well you do in the class is directly related to how much homework you complete. If you aren't able to do the homework correctly, you probably won't pass.** It is further to your advantage to ask questions about homework problems that give you difficulty. You might also find it helpful to read the relevant portions of the textbook.

Your completion and understanding of the homework will be assessed regularly. In particular, you will be asked to submit answers to selected problems on **WebAssign**, an online homework system. At times I will also specify one or more exercises for you to turn in on paper. In addition, there will be one in-class quiz during a typical week. (Some weeks might have two quizzes.) Material for a given quiz will usually be drawn from one or more of the following sources:

1. Material discussed in our class meetings since the previous quiz,
2. Problems taken directly from regular homework assignments (not WebAssign),
3. Problems very similar to ones on the regular homework,
4. Examples presented in class by students. (See the "Presentations" section below.)

Quizzes will usually be announced, but may occasionally be unannounced, and you will typically have between 3 and 15 minutes to complete each quiz depending on its length. At the instructor's discretion, quizzes missed due to *serious* and *unavoidable* circumstances may be made up for full credit, and quizzes missed for other reasons may be made up for half credit. (If you expect to have an excused absence, see me about taking the quiz early.) Each student's lowest quiz score for the semester will be dropped.

Some projects and other special assignments might also be collected and graded. Due dates for all assignments will be specified, and no late work will receive full credit, except in the case of an excused absence on the due date. (See the **Attendance Policy** section below.) I define work to be *late* if it is handed in, without an excused absence for the due date, after the beginning of the class period following the due date. Late work can still be handed in and graded, but will receive credit for only 50% of the points earned. However, no late work may be handed in after the last day of class or more than two weeks after the original due date.

Comments will always be provided on collected work, but some problems might be graded partially on completion rather than in full detail for correctness. I recognize the importance of timely feedback on your work, and will endeavor to return all graded material to you within one week. Some bonus points *might* be provided if it takes me longer that one week (excepting breaks) to return any item.

Exams. The purpose of the exams is to determine your level of mastery of the *concepts* of the course as well as the procedures. They will test not only your ability to memorize, but also your ability to think. There will be three 50 minute in-class exams and a 120 minute comprehensive final examination. The *tentative* dates of the in-class examinations are September 20, October 22, and November 19. The final exam will be given on Tuesday, December 14, at 8:30am.

A make-up exam can be taken if an exam is missed due to *serious* and *unavoidable* circumstances, or in the event of an excused absence, and only if your request to make up an exam is made *in advance of or as soon as reasonably possible after* the exam (and approved by the instructor). Make-up exams should

be taken within three class periods following the in-class exam. If these conditions are not satisfied, it is understood that the opportunity to make up the examination is voided.

Presentations. Each student will be expected to present two predetermined examples to the class during the semester. Students will sign up for an example in advance and then receive a list with all the example statements for that round. Tentative dates will be included. Presenting involves demonstrating the use of newly introduced concepts to the other students and hence carries the significant responsibility of teaching the class. Presenters are strongly encouraged to discuss their examples with the instructor before presenting. Presentations will be assessed using numerous factors, including pace, clarity, boardwork, verbal commentary, completion, and creativity, in addition to mathematical correctness. Each presentation is worth 25 points.

Observing a presentation also involves serious responsibility. *All students are urged look over and attempt the examples before they are presented in class.* Students in the audience should listen attentively to the presenter, ask questions about anything that is unclear, and (if comfortable doing so) point out mistakes made by the presenter. Feel free also to comment on anything relevant that you noticed or found interesting about the example, as this can add a valuable perspective for the rest of the class. The student presentations are an integral component of the course, and understanding them is crucial to mastering the course concepts. **During the semester at least three quiz problems and three exam problems will be taken directly from student presentations!**

Grading and Evaluation. Performance in this course will be evaluated on a percentage system. Your average on the regular exams will constitute 42% of the final grade, so that each exam will individually be 14% of the grade. Example presentations will determine 8% of your grade. Quizzes will account for 10% of the grade, and the online homework via WebAssign makes up another 14% of the grade. Other homework, together with any projects, will form a category worth 6% of the grade. The remaining 20% of the grade will be determined by the final exam. At the end of the course, your cumulative average (AVE) will be computed as follows.

E	=	Exam average
F	=	Final exam percentage
P	=	Presentation average
W	=	WebAssign average
O	=	Other homework average
Q	=	Quiz average
AVE	=	.42E + .20F + .08P + .14W + .06O + .10Q

During the semester, averages will be posted and (somewhat) regularly updated on ANGEL.
Letter grades will be assigned as follows based on a student's final percentage:

93 and above=A; 90-92=A–; 87-89=B+; 83-86=B; 80-82=B–;
77-79=C+; 73-76=C; 70-72=C–; 67-69=D+; 63-66=D; 60-62=D–; below 60=F.

The instructor reserves the right to lower the grade ranges. The grade ranges will not be raised.

Attendance Policy. We will follow the SUNY Fredonia attendance policy. (See http://www.fredonia.edu/catalog/3833.htm in the 2010–2011 University Catalog.) Attendance is crucial to success in this course. You probably won't be able to pass the course if you do not attend regularly. Learning calculus is a cumulative experience. If you miss class even once, you might have difficulty catching up. If you must be absent, please notify the instructor beforehand. An attendance sheet will be passed around each time the class meets. **It is your responsibility to sign this sheet** each period in order for your attendance to be official.

Work missed during an absence can be made up if the absence is determined by the instructor to be an *excused absence*. Your absence will be excused if you are participating in a university-sponsored program, exercising religious beliefs, hospitalized, or attending the funeral of a relative. *Other absences due to unavoidable circumstances may also be excused at the discretion of the instructor.* Appropriate documentation related to an absence, provided to the instructor in a timely manner, will greatly aid your case for getting that absence excused.

Special Accommodations. Reasonable accommodations are available to students with documented disabilities at SUNY Fredonia. Students who might require instructional and/or examination accommodations should contact the office of Disability Support Services for Students (DSS), located on the 4th Floor of the Reed Library (716-673-3270 or disability.services@fredonia.edu). The DSS coordinator will review documentation and determine accommodations on a case-by-case basis. DSS will notify the instructor with an accommodation letter which verifies that you have registered with the DSS office and which describes any accommodations approved for you. After you have met with the DSS coordinator, please contact the instructor to discuss any needed accommodations. See also www.fredonia.edu/tlc/DSS/dss.htm .

Withdrawal Policy. The drop and withdrawal policy for this course will be that of the University. (See http://www.fredonia.edu/catalog/3826.htm and http://www.fredonia.edu/catalog/3849.htm in the 2010–2011 University Catalog.) IT IS YOUR RESPONSIBILITY TO KNOW AND COMPLY WITH ALL DEADLINES. The last day to DROP this course is **Friday, August 27**. The last day to WITHDRAW from this course is **Friday, October 29**. The last day to completely withdraw from the university (barring extreme circumstances) is **Monday, November 29**.

Academic Integrity. Each student is expected to "support and abide by all provisions of the ... Academic Integrity Policy" (http://www.fredonia.edu/catalog/4442.htm, 2010–2011 University Catalog). While we will follow this policy, more details are given below regarding the conduct that is expected in this class. Please ask if at any time it is unclear whether some action is or is not allowed.

You are encouraged to work together on homework and in learning the material. While working with another person or in study groups is permitted, **all final work submitted for individual assignments must be your own**. The principle here is simple: *Under no circumstances and in no way should you ever copy any part of anyone else's work and present it as your own.* Whether discussing hand-in homework with a group, comparing solutions with a friend, or getting help from a tutor, do not take any notes from the discussion away with you—in other words, you can share your thoughts (including, for instance, on paper or a board), but you must walk away with only your understanding. In particular, write solutions up on your own. No collaboration is allowed on exams. In cases where work appears to be copied, I will invite the students involved to my office to explain the relevant material and the situation to me. A student who cannot explain his or her work adequately or who fails to present an explanation will lose points or receive a grade of zero on the assignment in question. Furthermore, a required report of the violation will be sent to the Dean of the College of Arts and Sciences. Ultimately, *in order to be successful in learning the material and preparing for the examinations, you need to try to work out assigned problems yourself as much as possible.* Otherwise you are cheating yourself.

SUNY Fredonia Counseling Center. LoGrasso Hall; Phone: 673-3424; www.fredonia.edu/counseling Services are free and confidential.

Daily schedule. A *tentative* daily schedule for this course is available online at http://www.fredonia.edu/faculty/math/JonathanCox/calculus/schf10.pdf .

Any changes to this syllabus will be communicated in class by the instructor.