#### Analytic Geometry and Calculus I MA 170, Spring 2006

#### **General Information**

Instructor:	Dr. Lee Chasen	Office:	PPHAC 219
Phone:	610-861-1373	e-mail:	lchasen@moravian.edu
Class Schedule:	MWF 7:30 to 8:40 AM		
Office Hours:	MWTF 1:30 – 2:30 p.m., and by appointment.		
Textbook:	Single Variable Calculus, Early T	Transcenden	tals, 5 <sup>th</sup> edition by James Stewart

#### **Course Goals**

There are two primary branches of calculus, differential calculus and integral calculus. After completing this course, successful students will:

- Be able to apply the tools of differential calculus to study and solve problems involving tangent lines and rates of change. These core concepts are used in virtually every area of science.
- Be able to work with functions verbally, algebraically, graphically, or numerically. Be able to model real life scenarios with functions and draw conclusions regarding those real life scenarios by leveraging their understanding of calculus and functions in general.
- Be able to apply the tools of differential calculus to develop a working understanding of the behavior of new and complicated functions (especially from a graphical point of view).
- Have an understanding of the way in which integral calculus is used to study and solve problems involving area. In subsequent courses, those techniques will be used to find the volume of a solid, the force of water against a dam, the work done in pumping water out of a tank, and many other related problems.
- Gain a sense of both the advantages and disadvantages of using technology to study the behavior of functions.

# The Importance of Reading and Learning on Your Own

While I do not expect the average first or second year college student to be able to teach themselves calculus from a textbook without assistance, I do hope that you recognize the very high value placed upon this skill by your future employers. With that in mind, you will be asked to practice reading mathematics regularly. You will be asked to interpret mathematical expressions and statements verbally as well as in writing. You will also be expected to learn techniques on your own from the reading material and the examples found in the book. These activities will contribute to your grade.

# Attendance, Participation, and Organization

Your attendance and *active* participation in class is required. You may be

- asked to work either on your own or within a group to complete classroom activities.
- asked to go to the board to present a homework problem.
- asked to submit homework problems.

quizzed on reading assignments. (these may be unannounced quizzes)

In short, you must come to class fully prepared to participate. You will be responsible for knowing which reading assignments are due and which homework problems might be collected. Since I will be providing quite a few handouts (including ones with the assignments listed), I suggest that you purchase a three ring binder.

Make up exams will only be provided in the case of a documented illness. Students will be excused from, or allowed to reschedule, a quiz, class work, or homework assignment at my discretion only. As a general guideline, you may assume that if the need is not due to a conference or some other school sponsored activity, and if we have not agreed upon rescheduling *in advance*, rescheduling will not be allowed. I tend to frown very heavily on rescheduling for a school sponsored event if the students grades are not up to par. *Be absolutely clear, if I collect work, give a quiz, or have the class participate in a activity for which credit is being awarded, and you have not contacted me in advance of an illness or similarly important reason for your absence, it is unlikely that you will be given a chance to make up the work or have the assignment waived.* 

# Calculators and Technology

Graphing calculators will only be permitted during exams at my discretion. However, labs, homework, and classroom activities will, from time to time, require a graphing calculator. You should bring one to class regularly. That calculator must be comparable to a TI-83. Students using a different calculator will bear the responsibility for making it emulate the TI-83. (Note that I will only provide instructions for using the TI-83.)

#### Grading

In addition to the mandatory final exam, there will be four exams (two proficiency exams), a number of announced quizzes, regular (near daily) reading quizzes, homework spot-checks, and at least three labs (to be completed outside of class). There will also be periodic homework spot-checks in which you will be asked to close your book and transcribe your solution to a particular homework problem. Your course grade will be computed as follows:

Quizzes/Homework/Class Participation (note that the bulk of this grade will be based on your quizzes average)	15% of your grade	
Labs	15% of your grade	
Proficiency Exam for Limits	5% of your grade	
Proficiency Exam for Derivatives	10% of your grade	
Two Exams (Each worth 15%)	30% of your grade	
Cumulative Final Exam	25% of your grade	

*Quizzes* will be given approximately once a week usually on Wednesdays. However, I reserve the right to quiz at any time and from time to time I may provide pop quizzes on assigned reading. Quizzes will test both your understanding of the material that has been covered in class as well as your understanding of the reading assignments. Pay particular attention to any assignment that calls your attention to specific examples or particular passages in the text. I do not expect you to come to class having memorized the entire section. However, if I call your attention to something, you should strive hard to grasp that material prior to class or the next quiz.

*Homework* will be assigned regularly and you are expected to complete the assignments. You should always come to class ready to submit your homework. It should be well labeled and neat. Always include the section and problem numbers. I will base your homework grade on both your written and submitted work as well as your apparent level of preparedness as demonstrated by your ability to ask and answer questions in class. For written work, I will consider the degree of effort, the neatness of the work, and whether or not the work is completed correctly.

*Class room participation* will be noted and will represent as much as 3% of your grade. You earn classroom participation credits by

- asking questions in class (not just naming a problem number). Providing a framework in which you have the opportunity to learn is my responsibility, the actual learning is your responsibility. When you do not understand something, you should ask questions.
- answering questions in class.
- participating in the classroom activities.
- working enthusiastically with your fellow students to ensure that you each understand the material.

I reserve the right to make qualitative judgments in determining grades for all graded work and or the course. Also, while this syllabus is subject to change, in the event of a change, students will be notified via an addendum to the syllabus which would be distributed during a regular class period.

# **Proficiency Exams**

There will be two proficiency exams: Limit Proficiency and Derivative Proficiency. You must pass both of these exams with a score of 80% or better to pass this class. If you fail to achieve an 80% the first time that you take the exam, you will have an opportunity to take a make-up exam. Note that the score on make-up exams will be rounded down to an 80% if the actual score is above an 80%.

# Lab Projects

The class will be divided up into small groups. Each group will be required to complete a sequence of labs.

#### Tentative Exam Dates

Limit Proficiency Exam: February 8, 2006	Exam 1: February 15, 2006
Derivative Proficiency Exam: March 15, 2006	Exam 2: April 5, 2006

# Extra Help

You are strongly encouraged to ask questions in class and to see either myself or the mathematics tutors for help outside of class as much as necessary. You will be informed soon about the tutor center hours.

#### Special Accommodations

Students with disabilities who believe that they may need accommodations in this class are encouraged to contact the Learning Services Office as soon as possible to enhance the likelihood that such accommodations are implemented in a timely fashion.

# Academic Honesty

For graded homework assignments and projects, you may use your class notes and any books or library sources, except a solutions manual. You may not use the help, orally or in written form, of any individual other than your instructors unless it is specifically a group assignment and you may not copy someone else's work or let someone else copy your work. If an assignment is completed by a group of two or more people, each person who contributed to the work must put his or her name on the work. All in-class daily problems, quizzes and tests are to be done by you individually unless specifically stated by your instructor for a particular event.

The College academic honesty policy appears in your Student handbook; you are expected to be familiar with it. The *Academic Honesty Policy Guidelines* specific to mathematics classes are reiterated at the end of this syllabus. They apply to work done outside of the class as well as to in-class quizzes and tests. Please read them carefully. If you are unsure about the propriety of a particular procedure or approach, please consult with your instructor before continuing with the assignment.

# Academic Honesty Policy Guidelines

#### MATHEMATICS COURSES

The Department of Mathematics and Computer Science supports and is governed by the *Academic Honesty Policy of Moravian College* as stated in the Moravian College Student Handbook. The following statements will help clarify the policies of the members of the Mathematics faculty.

In all homework assignments which are to be graded, you may use your class notes and any books or library sources. When you use the ideas or thoughts of others, however, you <u>must</u> acknowledge the source. For graded homework assignments, you may not use a solution manual or the help, orally or in written form, of an individual other that your instructor. If you receive help from anyone other than your instructor or if you fail to reference your sources you will be violating the *Academic Honest Policy of Moravian College*.

All in-class or take-home quizzes are to be completed by you alone without the aid of books, study sheets, or formula sheets unless specifically allowed by your instructor for a particular test.