

Math 121
Calculus I
Fall 2007, Section 3
CRN: 18190
MTWF 8:00-8:50
Ohlendorf 225

Instructor: Dr. Christopher Mouron

Office: 320 Ohlendorf Hall

Office Hours: MWF 1:00-2:00 or by appointment. Pop-ins are welcomed

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Text: *Calculus* –Early Transcendental Functions- 4th Edition. By Larson, Hostetler and Edwards.

Course Description: Calculus is a powerful tool in modeling real world problems. This course provides an overview of calculus with some emphasis placed on applications. In order to realize this, one must develop a theoretical and conceptual understanding as well as the ability to manipulate symbols. We will cover integration techniques, sequences and series, differential equations and applications of integration.

Course Content: The goal is to cover all of the topics in chapters 2-5. We will cover

- 1) **Limits:** We will look at limits graphically, numerically and analytically. We will study the epsilon-delta definition of limit. We will also look at one-sided and infinite limits.
- 2) **Continuity:** We will examine continuity graphically and analytically. We will study the properties of continuous functions and intermediate value theorem.
- 3) **Differentiation:** We will use limits to define the derivative and examine the tangent line problem. Techniques of differentiation, such as the power, product, quotient, chain and inverse rules, will be developed. Also, we will cover implicit differentiation.
- 4) **Applications of differentiation:** We will use the 1st and 2nd derivative to aid in sketching the graph of a function.
- 5) **Integration:** We will find the us Riemann sums to estimate the area under a curve. We used the fundamental Theorem of Calculus to find the area under a curve. The technique of substitution will be developed to and in finding the antiderivative.

Course Prerequisites: Algebra I, II, Geometry, Trigonometry, knowledge of exponential and logarithmic functions.

Attendance Policy: I will follow the College's attendance policy, which can be found on page 69 of the Catalogue. In particular, a student will be giving a warning after 4 absences and a written recommendation to the Dean that the student be dropped from the course will be made after 7 absences. In the case of a missed test, the student will be allowed to make-up the test only if both of the following conditions are satisfied:

- 1) I am contacted before the test is given (at least 1 week in the case of absence due to the attendance of an official school function.)
- 2) I am given proper documentation.

Finally, the student is responsible for all material and notes due to an absence. Get the notes from another student. Come to my office for any materials handed out in class.

Homework, Labs and Quizzes (10%): Mathematics is not a spectator sport. In order to learn the techniques and concepts, the student must work problems outside of class. The student is expected to spend at least 3 hours outside of class for every hour spent in class.

- 1) Practice exercises. These are problems that the student should do before the next class meeting. Students are expected to keep a notebook containing these exercises. If a student has difficulty with an exercise, the student may ask me to do it in class (provided time allows) or in my office. Students may work together on these exercises or ask help from a tutor or the MatHelp center. If a student fails a test, the student will be required to show progress on the daily exercises in the notebook until the next test.
- 2) Graded exercises. These problems will be collected usually once a week. Due to the fact that I have 80 students, it is imperative that the work turned in is neat and organized. The student will be graded on correctness of the work. Also the student is required to show all work leading to an answer. The students may not work together on these specific problems or receive any outside help except from me or the text. Copying homework will be considered an honor violation and students suspected of copying homework will be referred to the Honor Council.
- 3) Online Homework. There will be homework that is graded online. These will be shorter, drill type questions given daily. Then website that supports this is http://hosted2.webwork.rochester.edu/webwork2/Rhodes_math121-mouron/.
- 4) Pop quizzes. If it is evident to the instructor that the students are not keeping up with the homework, a pop quiz may be given.

Also, the student is expected to “pre-read” the text before the lecture. This is an excellent way for the student to familiarize him/herself with the material covered and will aid the student in following the lectures.

Written Discovery Projects (15%): There will be 4-6 discovery projects that will consist of longer, more involved applications of calculus. These projects must be typed and will be graded on correctness of the mathematics and written exposition.

Late homework and projects will not be accepted. You will have plenty of time to complete assignments to turn in. If you are sick, have a roommate, classmate or friend turn in your homework for you. If they can get it to me before noon, it will be accepted. If you plan to miss class for other reasons, turn in the homework early or have a classmate turn it in during class.

Tests (48%): There will be 3 tests throughout the semester. Unless otherwise notified, the test will be closed book and notes. Tentative test dates are:

- 1) September 21
- 2) October 23
- 3) November 27

Calculators will not be allowed on the tests.

Final Exam (27%): The final exam will be cumulative. Unless otherwise notified, the exam will be closed book and notes. The final exam will be Saturday, December 8 at 5:30 pm.

Calculators will not be allowed on the final.

Grades: Grades will be earned for the following percentages:

<i>A</i>	Score \geq 93%	<i>C</i>	73% \leq Score $<$ 77%
<i>A-</i>	90% \leq Score $<$ 93%	<i>C-</i>	70% \leq Score $<$ 73%
<i>B+</i>	87% \leq Score $<$ 90%	<i>D+</i>	67% \leq Score $<$ 70%
<i>B</i>	83% \leq Score $<$ 87%	<i>D</i>	63% \leq Score $<$ 67%
<i>B-</i>	80% \leq Score $<$ 83%	<i>D-</i>	60% \leq Score $<$ 63%
<i>C+</i>	77% \leq Score $<$ 80%	<i>F</i>	Score $<$ 60%

MathHelp: MathHelp is a free problem session run by students in the evenings. It is a place to enhance your understanding of the concepts of the course. However, it is not a place to get the answer for the work that is to be turned in.

Note: I will be in Japan from December 1- December 14 attending an important Mathematics Conference. We will be finished with the course material by that time. The last 3 classes will be review for the final exam and used to finish the last project. A substitute teacher will cover those last 3 classes.

Honor Code: The student is expected to conduct him or herself within the guidelines of the College's Honor Code. If you have any questions about what is or not allowed, please ask.

If you have a documented disability and wish to receive academic accommodations, please contact myself and the Office of Student Disability Services as soon as possible.