

Syllabus
Calculus I
Math 121, Section 5, CRN 19676
Fall 2008

Instructor: Associate Professor Eric Gottlieb
Contact data: 317 Ohlendorf
Office hours: 2-3:30 MW, 2-3 TF. Unannounced visits are
welcome, time permitting.
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The subject: Calculus is a beautiful subject that has applications to both concrete and abstract problems. Calculus has been used to improve our understanding of such diverse phenomena as economic behavior, ion transport in cells, population dynamics, the motion of heavenly bodies, and the flow of air and fluids. The methods of calculus are used in theoretical subjects like statistics, geometry, and number theory and are of theoretical interest in and of themselves.

Calculus in one variable divides naturally into two main parts, which are known as integral and differential calculus. These parts are connected at their base by the notion of limit and are united at their apex by the Fundamental Theorem of Calculus. We will cover parts of all of these pieces in this class.

Differential calculus, the primary focus of study in this class, is about 300 years old. The main idea is to approximate a curve near a point with the line tangent to the curve at that point. Many powerful techniques and insights follow from this simple idea. We will introduce integration and study the Fundamental Theorem at the end of the semester. Some of the ideas of integral calculus appeared 2500 years ago. Integration receives deeper coverage in Math 122.

AP credit: You will earn credit for this class if you scored at least a 4 on the AB version or at least a 4 on the AB subscore of the BC version of the AP Calculus exam. You cannot earn credit for this class and Applied Calculus (Math 115). If you are unsure about which class to take, please speak with me.

If you took calculus in high school, please do not assume that this class will be easy for you. I have had many students do poorly in this class after doing well in high school calculus. Some of these students have underperformed because they had a false sense of security.

The text: We will cover Sections 2.2 through 5.5 of *Calculus: Early Transcendental Functions, 4th edition*, by Larson, Hostetler, and Edwards. See the attached schedule for tentative dates on which each section will be covered. Depending on our progress, I may omit some sections, ask you to read them on your own, or introduce additional topics. We will not cover Chapter 1, but I expect you to be familiar with the material it contains. For this reason, I recommend that you review Chapter 1 on your own. I also encourage you to read Section 2.1.

Exams: There will be three midterm exams and a final as indicated below. The dates are fixed, but material to be covered is tentative and depends on our pace.

Exam	Date	Material to be covered
MT 1	Monday 15 September	Sections 2.2 – 2.5
MT 2	Friday 17 October	Sections 3.1 – 3.8
MT 3	Wednesday 19 November	Sections 4.1 – 4.8
Final	Tuesday 16 December, 1 PM	Comprehensive, with extra emphasis on material not covered on earlier exams

If you know you will miss an exam, you must notify me in advance so we can arrange an alternate time. You must provide a compelling and documented reason for missing the exam.

Quizzes and homework: I will assign but not collect homework for each section we cover. I will give take home quizzes on 2, 8, 15, 22, and 29 September; 6, 14, and 27 October; 3, 10, 17, and 24 November; and 1 and 8 December. They will be due at the start of the next class meeting. Quiz problems will be similar to assigned homework problems, so it is to your advantage to do the homework. There will be no makeup quizzes, but if you miss a quiz for a valid and documented reason, I may elect not to include that quiz when computing your quiz average. If attendance is low on a given day, I may give a pop quiz, which will count as one of the quizzes to be included in the quiz average. I will drop the lowest quiz grade.

Calculators are not permitted on exams and quizzes. You may use them to check your answers on homework and projects, but you should be careful not to become over-reliant on them.

Projects: There will be two projects, the purpose of which is to help you to hone your technical communication skills. They will take the form of written reports

on a specified topic. You will work in groups of three. Technical aspects of writing, clarity of writing, and mathematical content each will count for 30% of the project grade. Presentation will count for 10%. They will be assigned on Tuesday 16 September and Wednesday 22 October. They are due on Monday 29 September and Friday 7 November. These dates may change depending on our progress.

Attendance is not a formal part of your grade, but I hope that there will be a two-way dialogue in class. I want you to share what you know (or, perhaps more importantly, what you don't) and learn from what others have to say. Poor attendance often foretells poor performance. For these reasons, I will take roll each day. If you miss more than five classes without a valid reason, I reserve the right to ask the Dean to drop you from the class. If attendance is low on a particular day, I may give a pop quiz.

Your Final Grade is determined as follows:

Midterm Exams:	17% each
Quiz Average:	17%
Projects:	5% each
Final Exam:	22%

The letter equivalent of your number grade will be assigned according to the following scale. These represent minimum grades in order to allow me some discretion. It is possible, for example, to receive a B while earning a total score of less than 83%. However, if you earn a score between 83% and 86%, you are guaranteed to receive a grade of B or better.

93-100	90-92	87-89	83-86	80-82	77-79	73-76	70-72	67-69	63-66	60-62	<59
A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F

If you get stuck, please do something about it. Many students are reluctant to reveal confusion to their professor. I understand this sentiment, but I hope you won't take this approach with me. You wouldn't be in my class if you already knew the subject. I expect confusion from time to time; it is a natural (some might say necessary) part of the learning process. I would rather see confusion in class or in my office than on an exam.

The moral is, don't be shy! I'm here to help. Guiding you from confusion to understanding is one of the most gratifying parts of my job. Please feel free to ask questions in class if something is unclear. If you want to see me out of class, the best time for me is during office hours. If these are inconvenient, you may

stop by any time, but I cannot guarantee that I will be available. I have found that it is not efficient to try to resolve math questions by phone or email.

The Math Support Center is a great resource if you are having difficulty. It is housed in Ohlendorf Hall directly above 225 Ohlendorf. It is run by Dr. Rachel Dunwell and staffed by Rhodes students who serve as peer tutors. Its purpose is to assist students in strengthening their quantitative skills and to provide support to math-intensive courses offered at Rhodes. Your peer tutors are Josh Fuchs (fucjt@rhodes.edu), Brad Taylor (taybp@rhodes.edu), John Schulte (schjm@rhodes.edu), and Whitney Duval (duvwr@rhodes.edu). One of them will be available to assist you in strengthening your basic skills and to help with homework and projects from 7-9 PM Sunday through Thursday. I encourage you to work on your homework in the MSC even when the peer tutors are not scheduled to be there. This can be helpful since there may be other math students and professors nearby who may be able to help you if you need it.

I encourage you to work with your fellow students on homework and review. However, you should do so judiciously. For example, it would be a mistake to study someone else's solutions and then conclude that you are prepared to work such problems on your own. You must be able to work problems independently, as you will be required to do this on the exams.

The Honor Code: Violations of the honor code will be prosecuted. I reserve the right to assign a grade of 0 on any assignment for which the Honor Council finds that a violation has occurred. Please help me to keep the focus on learning and to avoid the unpleasantness associated with honor code violations.