

Math 165 – Calculus I Summer 2002

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Course Information

Prerequisite: Math 102 or 108 (with a C or better), or advanced placement.

Text: Calculus (8th ed.) by Varberg, Purcell, Rigdon (Prentice Hall)

Calculator: You will need to have a scientific calculator and be able to use it efficiently.

Course Description (catalog): Limits, derivatives and integrals of algebraic functions, applications of derivatives and integrals.

Course Description (instructor): Several years ago, a group of the brightest minds of our time got together to discuss the greatest achievements of mankind. Number one was the Calculus. My goal this semester is to teach you enough calculus to prepare you for Calculus II or whatever courses you have to come, but also to help you understand why this subject is so great. We will begin in Chapter 2 of our text and learn about limits. This is not very hard and fairly intuitive, and it is essential to everything else we will do. Chapters 3 and 4 are differential calculus. We will learn what a derivative is, what it means, and how to find it. A lot of this is simple, but sometimes students struggle understanding what a derivative means. We will focus on this repeatedly. Chapters 5 and 6 are integral calculus. Some of this is easy and some is hard, but all of it is fascinating. We will cover part of Chapter 7 as well, but we'll do it during Chapter 3.

Course Objectives: To learn as much of the calculus as humanly possible in one semester, while at the same time developing intuition and an awareness of higher mathematics. Ok, want less vagueness? At the conclusion of the semester, a student should understand limits, continuity, transcendental functions, derivatives, antiderivatives and definite integrals. In particular, a student should be able to:

- evaluate limits including limits at infinity
- find the slope of the tangent line to a function
- find the derivative of a given function
- interpret the meaning of a derivative
- graph a function using derivatives
- find the maximum and/or minimum value of a function
- solve application problems using derivatives
- find the antiderivative of a given function
- find the area under a curve of a given function
- approximate an area using Riemann sums
- compute the volumes of solids

Instructor Expectations: Come to class prepared to learn. I expect a high degree of intellectual

curiosity. In order to understand what we are doing in class, it will be necessary for you to do problems outside of class, and it would be beneficial to you to read the text prior to our covering the material in class. We will present homework problems at the board every day, and turn in a problem set once a week. We will have only two exams, a midterm and a final. You will be required (on all boardwork, turned in work, and both exams) to demonstrate knowledge and understanding of the material.

Grading Policy:

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| Problem Sets: | 10% |
| Boardwork: | 40% |
| Midterm Exam: | 25% |
| Final Exam: | 25% |

Grading Scale:

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| A: | 90% and above |
| B: | 80% - 89% |
| C: | 70% - 79% |
| D: | 60% - 69% |
| F: | below 60% |

Attendance: I will not include attendance as part of your course grade. I am not your mother or your parole officer, and this is not high school. I do, however, expect you to attend class everyday. You are responsible for all material covered in class.

Approximate Class Schedule: Below is a list of the sections we will attempt to cover this semester. If time allows, more sections may be added. If time does not allow, some sections may be skipped.

Chapter 2: Sections 4-9

Chapter 3: Sections 1-10

Chapter 7: Sections 1, 3-5

Midterm Exam- Friday, June 28, 9:00-10:20 a.m.

Chapter 4: Sections 1-7

Chapter 5: Sections 1-8

Chapter 6: Sections 1-4

****Final Exam- TBA (Monday, July 22 or Tuesday, July 23)****

Closing Remarks: It is assumed that you are attending this university because you have a desire for higher learning. It is therefore expected that you will pay attention, be respectful of your instructor and fellow students, and follow the Code of Student Conduct. Instances of academic dishonesty will be dealt with severely. If you are caught cheating, you will fail this course. Similarly, if you are a disruptive presence in the classroom, you will be dropped from the class.

Important Dates:

Final Date To Drop Courses With a "W" - **Wednesday, July 10**