

# MATH 165

## CALCULUS I

Nicholls State University, Summer 2005

Instructor: Dr. Brian Heck. My office is 106-E Peltier Hall and my office phone number is 448-4383 (4383 on campus). I will be available for office hours at 3M (10:30-11:50) and by appointment. Please drop by if you have any questions. Also, my email is brian.heck@nicholls.edu. If I am not in my office during my scheduled office hours, then I am wandering the halls of Peltier. Please hang around or come and find me. If I will be unable to hold office hours, I will put a note on my door.

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

Course Materials: Our required text is Calculus (8th ed.) by Varberg, Purcell, Rigdon (Prentice Hall). You will also need to have (at least) a scientific calculator.

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

Course Objectives: Several years ago, a group of the brightest minds of our time got together to discuss the greatest achievements of mankind. Their choice for the number one achievement was not the wheel, relativity, computers, or electricity. It was the Calculus. My goal this semester is to teach you enough calculus to prepare you for Calculus II (or whatever course you will take next), but also to help you understand why this subject is so great. More specifically, at the conclusion of the semester, a student should understand limits, continuity, transcendental functions, derivatives, antiderivatives and definite integrals. Essentially, we are going to do as much calculus in six weeks as is humanly possible, and in the end, a student will be able to:

- evaluate limits including limits at infinity
- find the slope of the tangent line to a function
- find the derivative and/or antiderivative 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 and antiderivatives
- find the area under a curve or the area between two curves

Grading Structure: We will have two exams (a mid-term and a final) this semester. We will also have weekly problem sets to emphasize important knowledge/skills, and we will put homework problems on the board. These items will be explained in more detail below.

**Board Work:** Approximately every other day, you will be asked to present homework problems at the board. You will be graded on how many problems you present, and how well you present them. Your grade on this component I'll call *BW*.

**Problems Sets:** Almost every Wednesday you will be assigned 3-10 problems due on the following Friday. The problems will mostly be the same type as the homework problems, but they will also include some "outside the box" thinking problems - much like the exams will have. This will form grade *PS*.

**Exams:** The midterm exam (*MT*) will cover differential calculus (Chapters 2-4), and the final (*F*) will cover integral calculus (Chapter 5-7). Both tests are required.

Your semester grade will be computed according to the formula:

$$\text{semester grade} = .35BW + .25PS + .30MT + .30F$$

and then you will be assigned your letter grade based on the usual 10% scale.

Class Schedule: Below is a list of the sections we will cover this semester. If we get ahead or fall behind, this may be altered. The exam dates are also tentative.

Chapter 2: Sections 4-9

Chapter 3: Sections 1-5, 7-9

Chapter 4: Sections 1-7

**Midterm Exam**

**(Thursday, 6/23, 9:00 am)**

Chapter 5: Sections 1-8

Chapter 6: Sections 1-4

Chapter 7: Sections 1-5

**Final Exam**

**(Tuesday, 7/19, 10:00 am)**

Disability: If you have a documented disability that requires assistance, you will need to register with the Office of Disability Services for coordination of your academic accommodations. The Office of Disability Services is located in Peltier Hall, Room 100-A. The phone number is (985) 448-4430 (TDD 449-7002).