

Calculus for Social Sciences 1

MATH 125-03, MWF 3:00 - 3:50, O'Neil 123, Fall 2001

Dr. Gareth Roberts

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Office hours: Mon. 10:00 - 12:00, Wed. 4:00 - 5:00, Thurs. 3:00 - 4:00 or by appointment.

Required Text: *Applied Calculus for the Managerial, Life, and Social Sciences*, 5th Edition, by S. T. Tan.

Web page: <http://mathcs.holycross.edu/~groberts/Courses/MA125/homepage.html>

Homework assignments, schedule changes, exam materials, useful links and other important information will be posted at this site. Please bookmark it! Also, there will be a site for you to make use of group communication tools like discussion board, chat room, calendar, etc. using the Blackboard system at <http://cms.holycross.edu>

Course objectives:

- Develop an understanding for the techniques and theory of one variable calculus.
- Become proficient at making clear and coherent mathematical arguments.
- Work and communicate with your peers.

Syllabus: This course is primarily intended for Social Science majors or other students interested in fulfilling their Mathematics or Natural Sciences core requirement. The focus is on one variable functions—polynomial, rational, algebraic, exponential and logarithmic—with the associated algebra and geometry. The concepts of limit, continuity, derivative, and integral are developed and applied to the usual topics—extremum problems, curve sketching, related rates and area. Models for economics are featured. We will cover Chapters 1-5 of the text in detail and as much of Chapter 6 as time permits.

Note: The MATH 125, 126 sequence is a terminal sequence. Students considering taking more mathematics courses beyond Calculus should be in MATH 131 or 133, or a higher level course.

Homework: There will be homework due every Friday at the START of class. Assignments will be posted on the course web page. There will be a list of problems for you to hand in, a subset of which will be graded. **Late homework will not be accepted.** While you are allowed and encouraged to work on homework problems with your classmates, the solutions you turn in to be graded should be your own. Plagiarism will not be tolerated.

It is highly recommended that you take advantage of the **Calculus Workshop**, a drop-in peer tutoring center, open Sunday through Thursday from 7:00 - 9:00 pm in SWORDS 302. This is an excellent place to get help while you are working on homework problems or studying for tests.

Quizzes and Exams: There will be 3 quizzes and 2 exams, all in class. A comprehensive final will be given at the end of the semester. The exam schedule is given below. Please mark these dates down and plan accordingly. Any conflicts must be legitimate and brought to my attention well before the exam is scheduled. If you have any specific learning disabilities or special needs and require accommodations, please let me know early in the semester so that your learning needs may be appropriately met. You will need to contact Dr. Matthew Toth of Disability Services in Hogan 207 (x 3693) to obtain documentation of your disability.

One interesting feature of the exams is that each student will be asked to provide a sample problem (with solution) before each exam. These will be graded and count towards your homework grade. My favorite problems will be chosen for the exam.

Quiz/Exam Schedule:	Quiz 1	Wed., Sept. 19	In Class
	Exam 1	Wed., Oct. 3	In Class
	Quiz 2	Wed., Oct. 24	In Class
	Exam 2	Wed., Nov. 7	In Class
	Quiz 3	Wed., Nov. 28	In Class
	Final	Mon., Dec. 10	2:30 pm

Grade : Your course grade will be based on your scores on the homework 20% , quizzes 20% , two in-class exams 30% and final exam 30% .

How to do well in this course :

- **ATTEND THE LECTURES, PARTICIPATE and ASK QUESTIONS**

I take pride in my lectures and will work hard to get you to master the course material. However, this will not be of much use to you if you don't attend class. Furthermore, certain class periods will involve your participation in activities designed to get you to think. These days should be fun, with me lecturing little and you participating greatly. Do not take for granted the privilege you have of attending college. Value your time here and I will make it worth your while.

- **DO YOUR HOMEWORK REGULARLY.**

The best way to learn mathematics is to *do* mathematics. This means mastering the material to the point where you could explain it to your classmates and your friends. "You don't really learn the subject until you teach it," is a common adage amongst mathematicians. It is not enough to know how to mimic an algorithm. An "A" student should be able to follow and propose arguments as to why an algorithm is working or not working.

- **WORK WITH YOUR CLASSMATES.**

Some of the best assets available to you are the knowledge and abilities of your peers. Learn to explain mathematics to your classmates. Mathematics can be fun and rewarding when there are people around you who enjoy figuring out problems as much as you do. Take advantage of this opportunity and organize study groups.