

Math 223–01
Calculus III
Fall, 2007
CRN: 18193
MWF 8:00am to 8:50am
Buckman 110

Instructor: Dr. Christopher Seaton
Office: 318 Ohlendorf Hall
Office Hours: MWF: 10:30am to 11:45am
Tues: 12:30pm to 1:45pm or by appointment
Phone: x3721
E-mail: seatonc@rhodes.edu
Web: <http://www.rhodes.edu/mathcs/faculty/seaton/> and WebCT
(Warning: my personal web page may be moved this semester)
Text: Thomas Barr, **Vector Calculus** (2nd Edition)

Course Description:

The third semester of calculus deals with vectors and geometry in two-, three-, and higher-dimensional spaces, generalizing the derivative and integral to scalar- and vector-valued functions of several variables and applications of these concepts. Calculus in this context will have a much more geometric flavor than the first two semesters of calculus.

Content:

The material to be covered includes vectors, lines, planes, surfaces in three-dimensional space, real-valued functions of several variables, partial and total derivative, optimization, multiple integrals, vector-valued functions and calculus of vector fields, and—as time permits—generalizations of the fundamental theorem of calculus.

Course Prerequisites:

This course requires a solid background in single-variable calculus. For instance, Math 121 and 122 at Rhodes or a score of at least 4 on the BC Advanced Placement Calculus Exam are sufficient.

Office Hours:

Students are **strongly** encouraged to take advantage of my office **hours and to make appointments when my office hours are not convenient**. My schedule is posted online at <http://www.rhodes.edu/mathcs/faculty/seaton/schedule.htm> and on the door of my office. Please consult this schedule before suggesting an appointment time (particularly via e-mail).

Web Page:

This syllabus, along with the lecture notes and summary of past homework assignments, is available on WebCT. It is a course requirement that you log in to WebCT and familiarize yourself with downloading documents—we will not be using many

features, so it shouldn't take long at all. I will announce anything I posted in class, but students are encouraged to consult WebCT periodically, particularly if they have missed a class.

The homework summary is for your reference when studying for an exam. It is subject to change until the assignments have been given in class.

Attendance Policy:

I will take attendance. You are permitted **three** unexcused absences throughout the semester; if you are absent three or fewer times, you will be allowed to skip one problem on the final for which you will receive full credit (one tenth of the test). An excused absence must be discussed with me **in advance if possible**, and the proper documentation must be made available where appropriate. If I decide that excessive absences are jeopardizing your ability to pass the course, I will take action as outlined on page 68 of the catalogue. It is your responsibility to obtain notes and assignments when you are absent.

Lectures:

I expect to give most of the lectures using my tablet PC. This way, everything written on the (virtual) blackboard can be saved electronically. I will post the notes on WebCT in a timely manner (usually within a few hours after the lecture). **This is not designed to discourage you from taking notes!** Rather, it should give you some freedom to take notes on what I say and your own observations rather than what I write.

Students who discover mathematical errors in the lecture notes and report them will be awarded extra credit towards their homework grade (approximately 1-3 points on one assignment depending on the error) provided that the student was not informed of the mistake by another student.

Grading:

Your letter grade for the course will be based on the following scale:

A	[93, 100]	B-	[80, 83)	D+	[67, 70)
A-	[90, 93)	C+	[77, 80)	D	[63, 67)
B+	[87, 90)	C	[73, 77)	D-	[60, 63)
B	[83, 87)	C-	[70, 73)	F	[0, 60)

This scale is "worst case scenario"; I may choose to uniformly reduce the numerical requirements for a grade, but will not increase them.

The total percentage will be computed as follows:

Homework:	15%
Written Discovery Projects:	15%
Exams:	2 × 20%
Final Exam:	30%

Homework:

At the end of each lecture, I will assign both practice problems for you to test your comprehension and homework problems to be handed in. The homework from one

week is due the following Wednesday (or the second lecture day of the week in case of holiday). The homework you hand in must be your own work; you may work on the problems with other students, but they **may not aide in the write-up**. I reserve the right to give in-class quizzes or group assignments that will count as homework assignments.

Written Projects:

There will be two or three written projects that consist of longer, more involved applications of the material. These projects must be typed and will be graded both on content and exposition.

LATE HOMEWORK WILL NOT BE ACCEPTED.

Exams:

There will be two mid-term exams. The exams will be given in FJC from 7:00pm to 8:30pm on Wed. Oct. 3rd and Wed. Nov. 14th.

If you have to be absent for an exam, you **must** make arrangements with me as early as possible **before** the day of the exam, and you will be expected to document your absence. Otherwise, you will not be allowed to make up the test. **In most circumstances, I will not make arrangements for you to make up an exam unless I have been notified one week before the day of the exam.**

Final Exam:

The final exam is scheduled for Sat., Dec. 8th at 5:30pm. It will be a closed-book, closed-notes, cumulative exam with a slight emphasis on material covered after the second mid-term.

Calculators:

Calculators will not be allowed on the tests. You may use calculators or software packages on your homework, but you must still show sufficient work for me to follow your steps in order to receive full credit.

Honor Code:

All students are expected to conduct themselves within the guidelines of the College's Honor Code. Please ask me if you have any questions about what is allowed. I reserve the right to reduce a student's grade in the event of plagiarism whose intent cannot be verified.

Students With Disabilities:

If you have or think you may have a documented disability, please contact me and the Office of Student Disability Services as early in the semester as possible.