

Mathematics 203 – Calculus III

Section B – Winter 2005

Instructor Prof. Ted Sundstrom **Office** 2268 Mackinac Hall

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Instructor's Home Page <http://www.faculty.gvsu.edu/sundstrt/>

Class Schedule M W F 11:00 – 11:50 2312 Mackinac Hall
 Tu 11:00 – 11:50 2325 Mackinac Hall

Office Hours Mon. 10:00 – 10:50 Wed. 2:00 – 3:30
 Thur. 11:00 – 12:00 Fri. 10:00 – 10:50

Prerequisite MTH 202 – Calculus II

Textbook *Multivariable Calculus*, 3rd edition, by McCallum, Hughes-Hallett, Gleason, et al., copyright 2002, John Wiley and Sons, Inc.

ADA Statement GVSU seeks to ensure that its programs are accessible to all persons. Students in need of special assistance or an accommodation regarding any of the course requirements as outlined in this syllabus, the course objectives, and/or course evaluation and assessment criteria, are advised to notify the Office of Academic Support (200 STU, 616-331-2490) within the first two weeks of class. Confidentiality will be maintained regarding your special needs.

Internet Access and Student e-mail Most of the materials and information for this course will be posted to the course home page. This homepage is part of one of Grand Valley's internet sites called "GVSU Blackboard." The internet address for the GVSU Blackboard System is <http://bb.gvsu.edu>.

Students are expected to check the course home page daily since the course schedule and assignments will be posted on this home page. Students are also expected to use the e-mail provided by GVSU as the instructor will frequently send e-mail messages to the entire class.

Calculator All students are required to have a graphing calculator for this course. The TI-83 and TI-86 are recommended. It is expected that students will have their calculator with them during each class period.

Software More than calculators, we will make use of the mathematics software *Maple* to explore various aspects of multivariable calculus in our laboratory meetings. The power of *Maple* to show three-dimensional surfaces and vector valued functions will be valuable for improving our ability to understand functions of several variables and curves in space. You should plan on regularly spending time in the computer lab outside of class.

Course Content and Goals In this course we will cover most of chapters 11-16 in the text. Key topics to be studied include vectors (and the role they play in higher dimensions) and vector-valued functions, functions of more than one variable (their definition, meaning, and applications), and applications of differentiating and integrating functions of several variables. These latter two topics point to a central theme and goal of the course: how single variable calculus (Math 201 and 202) extends to higher dimensional settings. In every topic we study, we seek a conceptual understanding from several perspectives, the ability to apply ideas in new settings, development of logical reasoning and writing skills, and an appreciation for calculus as a whole. More than that, we will strive to see and learn interesting mathematics, and to enjoy the process of doing so.

Grading for the Course

Homework and Reading Assignments 10% of the course grade Homework problems and reading questions will be assigned on a regular basis, and are an essential part of the course. You are expected to (attempt to) complete each day's assignment prior to the next class meeting. I suggest that you complete your homework problems and reading questions on loose-leaf paper and keep them in a three-ring binder. On each Wednesday after the first week of class, some of these assignments will be collected and graded. Each problem from the text and each reading assignment will be graded on a 5 point scale. Grading will not be based on whether or not everything is correct, but rather on whether or not a serious and substantial effort was made to complete the problem or reading assignment. Please realize, however, that it is not possible to be successful in the course without completing the assigned problems on a consistent basis.

Group Activity Assignments 20% of the course grade In many of our lab meetings and some of our regular classroom meetings, there will be an independent group activity to complete. Most of these will be collected for a group grade (2-3 people will participate in each group). Like homework and other course activities, you should expect that an hour of work in the lab during class time be followed by at least two hours of time spent outside of class. More on these activities will be discussed in class when relevant.

**Problems of
the Fortnight**
20% of the
course grade

In addition to regular homework, it is important that we solve some of the many more substantial problems that multivariable calculus has to offer. Most often, one or two of these problems will be distributed on a Wednesday. Each problem will be graded on a 20-point scale. The final versions will be due two weeks after the problems are assigned. However, you will have the opportunity to submit a draft of your solutions one week after the problems are assigned. I will review these and return them to you no later than the following Monday. (Every attempt will be made to return them to you on Friday.) For this review, I will not be making corrections to your work but I will indicate if there are mathematical mistakes in your solutions. The primary purpose of the review is to critique the writing and presentation of the problem solutions. Your work on these problems is expected to demonstrate your highest standards of writing and mathematical reasoning in order to present a full solution to each problem. See the Standards and Expectations for Graded Written Work. More details will be announced when appropriate.

Tests
30% of the
course grade
(Each test will
be 15% of the
course grade)

There will be two tests. An attempt will be made to schedule the tests uniformly throughout the semester. This means that the first test will probably occur during Week 5 or Week 6, and the second test will probably occur during Week 10 or Week 11. The date of each test will be announced in class at least one week in advance. No make-up tests will be given without permission from the instructor prior to the date of the test.

**Final
Examination**
20% of the
course grade
Grading

The final examination will be a comprehensive test. The final exam is scheduled for Wednesday April 27, 2005 from 10:00 a.m. to 11:50 a.m.

Course grades will be no lower than the grades determined from the following scale:

Grade	Minimum Score	Grade	Minimum Score
A	93%	C+	77%
A-	90%	C	73%
B+	87%	C-	70%
B	83%	D+	67%
B-	80%	D	63%