

# MATH 4013—Calculus of Several Variables

## Summer, 2011—MTWR 9:00-10:15 AM—MSCS 422

**Instructor:** Dr. Robert Myers, Professor of Mathematics

**Office:** 429 Mathematical Sciences (MSCS)

**Phone:** 744-5792 (my office), 744-5688 (Mathematics Department office, for leaving messages)

**Email:** myersr@math.okstate.edu

**Online Classroom (Desire to Learn, “D2L”):** <http://oc.okstate.edu>

**World Wide Web Homepage:** <http://www.math.okstate.edu/~myersr>

**Office Hours:** MTWR 10:15–11:00 AM, or by appointment

**Text:** *Vector Calculus, 5th Edition*, by Jerrold E. Marsden and Anthony J. Tromba. The *Study Guide* by Karen Pao and Frederick Soon, which contains summaries of the material and detailed solutions to selected problems, is optional. We will cover most sections of the book and, as time permits, some additional topics from outside the book. Notes and exercises on such additional material will be available on D2L.

**Prerequisites:** Math 2163 Calculus III and Math 3013 Linear Algebra.

**Quizzes and Homework:** There will be regular quizzes (closed book and closed notes, unless otherwise indicated). Homework will be assigned, but it will not be collected or graded. Nevertheless, it is extremely important that you work on the homework problems; the quizzes and exams will consist of similar problems. The homework problems, including some that are not in the book, are listed on D2L.

**Exams:** There will be three 75 minute examinations. Unless otherwise indicated, exams will be closed book, closed notes.

**Grading:** Each regular exam is graded on a 100 point scale and counts 30% of your total course score. There is no final exam. There is no curving of exam scores.

The individual quizzes may be graded on different point scales. At the end of the semester your total quiz score will be adjusted to a 100 point scale as follows. A certain number of quiz points will be dropped from the maximum possible number of points to obtain a certain “perfect score”. For example, suppose that there were six quizzes and that their individual point scales were 25, 20, 30, 25, 30, and 20. Then the maximum possible number of quiz points would be  $25+20+30+25+30+20=150$ . If 30 points were dropped, then the “perfect score” would be 120. You would then be assigned the percentage (up to 100) of this “perfect score” that you have earned. Continuing with our example, if your scores were 20, 0, 10, 25, 20, and 15 you would have  $20+0+10+25+20+15=90$  quiz points. Then your total quiz percentage would be 75 (90 out of 120) instead of 60 (90 out of 150). If, in this example, you earned 120 or more quiz points then you would receive the maximum of 100. The number you are assigned will then count 10% of your total course score.

The following formula will give you a total course score which is some number out of 1000.

$$\text{TOTAL} = 3(\text{EXAM 1} + \text{EXAM 2} + \text{EXAM 3}) + \text{QUIZ}\%$$

If you make at least the following total score, you will make at least the indicated letter grade. (Depending on the distribution of scores, it is possible that lower cutoffs may be used.)

900 points–A, 800 points–B, 700 points–C, 600 points–D

CONTINUED ON THE BACK

**Partial Credit:** On quizzes there will be very little, if any, partial credit. On exams the amount of partial credit will depend primarily on how much of a problem you do correctly. On both quizzes and exams it is extremely important that you write down all of the steps involved in getting your final answer, not just the final answer by itself, in order to get credit. If a problem specifies a particular method and you do not use that method you should expect no credit on the problem, even if your final answer is correct.

The computations in this course result in several different kinds of objects. Some are numbers, some are vectors, some are scalar functions, some are vector functions, some are matrices. You must know which type of object is supposed to occur in each step of a problem in order to ensure credit. For example, if an intermediate step is supposed to produce a  $3 \times 2$  matrix and you write down a  $2 \times 3$  matrix instead you should not expect any credit on the problem, even if somehow you manage to stumble across the correct final answer.

**Online Material:** The course homepage on D2L will contain announcements, reviews for exams, quiz and exam solutions, and additional topics and homework problems which are not covered in the book. It will also contain your quiz and exam scores. After the first exam an estimated total course score and estimated course grade will be posted; the estimates will be updated after each new quiz and exam.

**Computer Software and MLRC:** Your understanding of the material in this course may be enhanced by the use of software for graphing. This is particularly true for three dimensional graphing. There are also some lengthy computations, such as those of multiple integrals, which can be made easier by the use of symbolic mathematics programs. One program which handles both of these tasks is Maple. It is available on the computers in the Mathematics Learning Resource Center (on the fourth floor of the Classroom Building) as well as in various computer labs around campus. Some other packages which are relevant to this course are Derive, Mathematica, and Matlab. Some graphing calculators also have some of these abilities. You are not required to use such software, but I urge you to familiarize yourself with it. In particular, it is an excellent way to check your homework. The MLRC phone number is 744-5818. The website is at <http://www.math.okstate.edu/mlrc>.

**Electronic Device Usage:** Unless otherwise indicated the use of calculators, computers, cell phones, or other electronic devices will be not be permitted during quizzes and exams.

**Makeups:** The procedure described earlier of dropping a certain number of quiz points to obtain a “perfect score” is the official mechanism for dealing with missed quizzes. Therefore, there will be no makeups for missed quizzes, no matter what the reason why the quizzes were missed.

Makeups for exams will be given only for serious and unavoidable reasons. You should try if at all possible to contact me before the regularly scheduled exam time. These makeup exams may be somewhat harder than the original exams.

**Further Information:** For information on dropping or withdrawing, academic integrity policies, disability services, and other sources of help or information please see the OSU Summer 2011 syllabus attachment. It is available online at <http://osu.okstate.edu/acadaffr/aa/syllabusattachment-Summer.htm>