

MATH 311.01 - CALCULUS III SPRING 2010

- Instructor:** Dr. Antonia Cardwell
- Office:** 206B Wickersham
- Phone:** x3479 (You can leave a message on my voice mail if I'm not in)
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- Webpage:** <http://muweb.millersville.edu/~cardwell/spring10/311-01.html>
- Lecture Hours:** 8:00 - 8:50 MTRF, Wickersham 101
- Office Hours:** 10:00-10:50 TR; 11:00-11:50 MF; 1:00-1:50 W
If the above times are inconvenient, see me after class and we'll make an appointment. I am also around at other times, so feel free to drop in.
- Description:** MATH 311 is a 4-credit course in calculus and is a continuation of MATH 211. The prerequisite for this course is a C- or better in MATH 211. This course may be taken for general education credit in the G2 block.
- Course Objectives:** The student will:
- Understand the algebra and geometry of vectors in 2 and 3 dimensions.
 - Understand the calculus of curves in \mathbb{R}^2 , the unit tangent and unit normals vectors, curvature, and motion along a trajectory.
 - Learn the three-dimensional vector algebra required by linear algebra courses: Dot and cross products, projections, and equations of line and planes in \mathbb{R}^3 .
 - Understand spherical coordinates and cylindrical coordinates.
 - Understand partial differentiation, and will apply partial derivatives to the computation of gradients, directional derivatives, tangent planes, and differentials.
 - Understand differentiable functions of several variables.
 - Locate and classify critical points of functions of several variables, and will solve applied optimization problems.
 - Understand definite integrals in higher dimensions. The student will set up and evaluate multiple integrals, and will be able to interchange the order of integration.
 - Understand line and surface integrals, potential functions, and path independence. The student will apply Green's theorem in the plane, and Gauss's and Stokes' theorems in \mathbb{R}^3 .
- Text:** *Calculus* (3rd edition) by Robert Smith and Roland Minton
- We will cover the following sections in the text: 10.1 - 10.6, 11.1 - 11.5, 12.1 - 12.7, 13.1 - 13.7, and 14.1 - 14.8.
- You are required to have access to a graphing calculator; it will be needed for some of the problems on the tests and the homework. The department supports the TI 82, 83, 84, 85 and 86 graphing calculators. Please note that you cannot share a calculator with someone else during an exam. You may not use a calculator with symbolic mathematics capabilities (such as the TI-89 or TI-92) during an exam. If you have any questions about whether a calculator is acceptable, please ask.
- Attendance:** Attendance is not compulsory but is *highly* recommended (and you lose points if you miss graded work).
- Homework:** Homework will be assigned daily and I will specify which of the problems I would like you to hand in.

Grading:

Your grade will be calculated based on the following work:

3 in-class exams (100 points each):	300
Weekly quizzes (5 points each):	50
Homework sets (5 sets worth 10 points each):	50
Final exam:	150
Total points:	<u>550</u>

The final exam for this section will be held on Thursday, May 6th, 2010, from 2:45pm - 4:45pm. You will need a *documented* excuse to take a test at any time other than the scheduled time. If possible, contact me ahead of time so that alternative arrangements can be made. Tests will not be rescheduled to accommodate vacation travel - be sure to make your travel arrangements so that they do not conflict with exams, class times or deadlines. For homework that is handed in after the specified due date, one point will be deducted for each class date that the homework is late, unless a valid excuse is given. You may hand in your homework early.

Grades:

To calculate your grade, I will add up the points that you have accumulated from tests, quizzes, and homework, and calculate your percentage. Grades will be assigned based on the following scale:

Percentage Range	Grade
93.0 - 100.0	A
90.0 - 92.9	A-
87.0 - 89.9	B+
83.0 - 86.9	B
80.0 - 82.9	B-
77.0 - 79.9	C+
73.0 - 76.9	C
70.0 - 72.9	C-
67.0 - 69.9	D+
63.0 - 66.9	D
60.0 - 62.9	D-
0 - 59.9	F

Academic Honesty/Integrity:

The University's policies regarding academic honesty can be found at <http://muweb.millersville.edu/~govern/sect3/acaddis.html>. Students should observe these policies as I will enforce them.

Special Accommodations:

It is University policy to provide reasonable accommodations to students with disabilities. Please contact the Learning Services Office, 348 Lyle Hall, 717-872-3178, to discuss accommodation needs.

Mathematics Assistance Center:

There is a Mathematics Assistance Center (MAC), staffed by our math majors, that is located in 100 Wickersham, and is open beginning with the second week of class. You might also find it helpful to form study groups to help each other with the homework. Space is allocated on a bulletin board at the MAC for students to place "study partner wanted" ads.