

MATH 241, SECTION C8
Vector Calculus and Mathematica, Spring, 2007

Instructor: Eric Landquist, landquis@uiuc.edu

Lab: 239 Altgeld Hall

Class: 142 Henry

Time: 10-10:50 MTWTh

Office: 245 Illini Hall

Phone: Office: 333-3973; Home/Cell 390-0865

Office hours: Monday 9-10 AM and Wednesday 11-12
(or by appointment)

Webpages:

Class Webpage - <http://www.math.uiuc.edu/landquis/math241cm.html>

ClassComm - <http://cm.math.uiuc.edu/classcommintro.php>

Calculus & Mathematica - <http://cm.math.uiuc.edu/>

Class Assistant: Dong Lee, dylee1@uiuc.edu

Textbook: There is no book. You will need to purchase the CD "Calculus & Mathematica". If you want to get Mathematica for a home computer, you can purchase the student version or lease a copy from CITES (\$25 for a year). See <http://cm.math.uiuc.edu/> for a link to CITES.

Recommended texts: Welcome to Calculus & Mathematica, Vector Calculus & Mathematica by Davis, Porta and Uhl.

Although the text is not required, students often find it useful to have a copy to study when they are away from the lab. The course is designed so that you can learn by exploring the text interactively using Mathematica rather than by reading a text or listening to lectures. Learning math by discovering it yourself is an essential aspect of this course.

Classcomm webpages: The "Classcomm" page, which requires a password, is <http://cm.math.uiuc.edu/classcomm>. You will use this website to turn in homework in the form of Mathematica notebooks. You'll also find assignments and message boards for the class on this website. Initially, your login and password are the same as your netid. Please change your classcomm password the first time you log in.

Goals: The course syllabus includes the following lessons from the electronic text:

Feel of Mathematica, VC.01 Vectors, VC.02 Perpendicularity, VC.04 Trajectories, VC.05 2D Measurements, VC.06 Sources, VC.07 Transform 2D integrals, VC.08 Transform 3D integrals, VC.09 Spherical Coordinates, VC.10 3D Surface Measurements, and VC.11 3D Flow Along.

Each computer lesson consists of three parts: Basics, Tutorials and Give It A Try. In these sections, new concepts are explained, then applied to problems, and finally you are asked to solve several problems on your own.

Group problem sets (Homeworks): Problem sets from the Mathematica notebooks will be assigned approximately weekly. These are to be done in groups of at most three (I recommend two) using the computer. You can do much of the work during class, but you will need to do some work outside of class, too. Each group will submit only one notebook, using the ClassComm webpage listed above. Each group member will receive the same score on the assignment. Be sure that every member of the group understands all the solutions!

Complete English sentences should be used to explain your solutions to the Give It A Try questions. By explaining your work I hope that you will learn to use the vocabulary of math 241 and provide yourselves with study aids written in your own words. Think about what you want to say and reread problems after you finish them.

I will not grade any late homeworks unless you have a reasonable excuse, which comes with some official documents.

IMPORTANT: All answers in the notebook format should be cell gray boxed. Format \rightarrow Background Color \rightarrow Cell Grey Box. For the first homework assignment, no points will be lost if this is not done. There after, you will lose points if answers are not highlighted. This makes homework easier to grade.

Literacy Sheet Problems: There will also be some written homework. They are short quiz-like sheets that I will use to keep track of basic understanding of calculus. There will never be any questions about Mathematica code on these either. Exam questions will generally look similar to Literacy Sheet problems.

Grading Policy:

50% Mathematica Homeworks
10% Literacy Sheets
20% Exams (2 in-class exams)
20% Final Exam (Wednesday, May 9, 2007, 7-10 PM)

Important: There is a catch. Your final grade can only differ by a maximum of one full letter grade from your exam average. Thus it is important that you study well for the exams. You will not be allowed to solely survive on your homework scores.

I will be grading on the standard scale (after rounding off):

A: 93-100	A-:90-92	
B+:87-89	B:83-86	B-:80-82
C+:77-79	C:73-76	C-:70-72
D+:67-69	D:63-66	D-:60-62
F:0-59		

Exams: The final exam will be cumulative.

If you have a documented reason (This will require a note from your academic dean or a letter from a medical professional explaining your illness.) to miss an in-class exam, we will arrange a make-up.

Other notes: If you are unable to make it to class because of athletics, field trips for other classes, academic conferences, etc. please let me know ahead of time.

One recommended option for saving drafts of homework is Net Files: <http://netfiles.uiuc.edu>.

There are Calculus & Mathematica labs in 24 Illini Hall and 239 Altgeld Hall. See the Calculus & Mathematica lab schedules for more information.

Because you are enrolled in a C & M course, you may sign up for Math 290 credit if you haven't done so before. The CRN is 37815. You will not be able to register using Illinois Enterprise. Instead, go to the Undergraduate Math office in room 313. You will need to request a form to add Math 290, have it signed by me, and then return it to AH 313. Your 290 grade is determined by their homework average in the course.

Your comments, criticisms, questions and suggestions will be welcome throughout the semester.