

Syllabus for Mathematics 550 Section 001 Spring 2025

INSTRUCTOR: Ralph Howard OFFICE: LeConte 352 PHONE: 777-7471
OFFICE HOURS: TWTh 2:30-3:30 and by appointment
TEXTS:

- The main text is *Div, Grad, Curl, and All That: An Informal Text on Vector Calculus 4th Edition* by H. M. Schey. There is a version on the Internet Archive which can be read online here.
A supplemental text is *Vector Calculus* by Michael Corral. A free pdf version is available here. Corral has a webpage, <https://www.mecmath.net/mecmath.net>, where various other formats of the text are available and where you can buy a hard copy for \$10.

CLASS WEB PAGE:

<https://ralph-howard.com/Classes/Spring2025/550/>

Most of the homework and class notes will be posted on this page.

Grading: There will be three hour exams of 100 points each. Homework will be collected and will count for 150 points. The Final will count for 150 points. This makes a total of 600 points:

Three midterms @100 points each	300 points
Two projects @25 points each	50 points
Final	150 points
Homework (includes quizzes)	150 points
Total	650 points

The grade will be based on the total number of points out of the 550 points. Note that the homework counts as much as the final and so it is important to do it.

Letter grades will be assigned to all the tests. The last day to drop without a “WF” is Monday, March 30 and you should have a good idea of where you stand by then.

There will be no make up exams. If you miss a test, then your score on that exam is 90% of the average of your other test scores (including the final). If you miss a second exam then the score on it is zero. As an example suppose you get 96 on the first two tests and 144

on the final but missed the third exam. Your average is then

$$\frac{96 + 96 + 144}{3.5} = 96.$$

So the score on the third exam is 90% of 96 which is 86.4. Assume your homework average is 90%, that is 135 points and that your total for the projects is 40. Then the total for the class is

$$96 + 96 + 86.4 + 144 + 135 + 40 = 557.4 \quad \text{out of 650}$$

So the average is

$$91.0\%$$

so you still get an A. The bright side of this system is that assume you had 96 on the first two tests, a 65 on Test 3, and 144 on the Final. Then you would have been better off just not showing up for Test 3. If this happens I will replace the 65 with 86.4 (90% of the average on the other exams).

Likewise **no late homework will be accepted.**

The exams will be on the following days:

Test 1 Friday, February 14

Test 2 Friday, March 21

Test 3 Monday, April 21

Final Wednesday, April 30 12:30pm.

Learning Outcomes: Students successfully completing Math 550 will be able to compute with vector fields, line and path integrals, orientation and parametrization of lines and surfaces, change of variables and Jacobians, and oriented surface integrals. They will also know the statements of the theorems of Green, and Gauss and how to use them doing concrete problems.