

Syllabus for Mathematics 551, Spring 2020

INSTRUCTOR: Ralph Howard

OFFICE: LC 304

OFFICE HOURS: TTh 2:30pm–3:30pm and by appointment.

CLASSROOM: Wardlaw College 114

TIME: MWF 9:40am–10:30am

TEXTS: We will use *Differential Geometry of Curves and Surfaces: Revised and Updated Second Edition* by Manfredo P. do Carmo which is available from Amazon for less than \$20. We will also use *Differential Geometry: A First Course in Curves and Surfaces* by Theodore Shifrin which can be downloaded for free at <https://math.franklin.uga.edu/sites/default/files/inline-files/ShifrinDiffGeo.pdf>

PREREQUISITES: Math 241 or an equivalent.

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
Final	150 points
Homework (includes quizzes)	150 points
Total	600 point

The grade will be based on the total number of points out of the 600 points. Note that the homework counts as much as the final so it is important to spend time on the homework. Some homework may be “collected” in the form of in class quizzes. Letter grades will be assigned to all the tests. The last day to drop without a WF is Thursday, October 13 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 80% of the average of your other test scores (including the final). 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 80% of 96 which is 76.8. Assume your homework average is 90% and 90% of 150 is 135. Then the total for the class is

$$96 + 96 + 76.8 + 144 + 135 = 547.8 \quad \text{out of 600}$$

So the average is

$$547.8/6.0 = 91.3\%$$

and you still get an A. If you miss a second exam then the score on it is zero.

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

The exams will be on the following days:

Test 1	Wednesday, February 12
Test 2	Monday, March 27
Test 3	Friday, April 17
Final	Wednesday, April 29, 9:00am

Learning outcomes: Students will master concepts and solve problems related to parametrized curves, regular curves and surfaces, change of parameters, tangent planes, the differential of a map, the Gauss map, first and second fundamental forms, vector fields, geodesics, the exponential map, and the Gauss-Bonnet theorem.