

Welcome to Math 554, Fall 2018

Time: MWF 12:45-1:40

Place: Room 115, Carnegie

Instructor: Will Wylie

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Textbook: *Elementary Differential Geometry*, by Andrew Pressley, Springer Undergraduate Math Series, Second edition.

Course Description: This is a course about the theory of surfaces in three-dimensional space. These objects come up often in the sciences, as they describe many objects in mathematical models of our 3-dimensional world. The goal of the course is to understand two main mathematical topics: the Gauss-Bonnet Theorem and minimal surfaces, and also discuss some of the applications of these topics in the sciences.

Prerequisites: The most important prerequisites are a good knowledge of multivariable calculus and linear algebra (all in 2 or 3-dimensions). The official prerequisites also include an undergraduate course in real analysis. While some concepts from analysis are used, a master's level student in the sciences with a strong background in calculus and linear algebra should be more than prepared for the course.

Coursework: The work for the class will consist of problems sets collected approximately every other week, two midterm exams and a final. There will also be worksheets done in groups in class mostly on Fridays. Depending on enrollment and time constraints, there may be a presentation given at the end of the semester.

Grading: The course work items will be weighted as follows:

Problem Sets, worksheets, and presentation	40%
Two exams	40%
Final Exam	20%

The final exam will be given more weight if it demonstrates improved understanding.

Midterm Exams: The midterm exams are tentatively scheduled for Friday, September 28th and Friday, November 9th. There are no calculators or electronic devices of any kind allowed during the exam. There will be no makeup exams. Any exam missed with a legitimate written excuse will be made up by weighing the final exam extra.

Final Exam: Friday, December 14th from 10:15am to 12:15 pm. All students must take the final exam at this time in order to pass the course.

Blackboard: Course materials and grades will be posted on Blackboard. Please check your grades on Blackboard regularly to ensure they have been recorded correctly.

Tentative Course Calendar:

This is rough outline of the sections in the book we plan to cover. Subject to change.

Aug. 27th to Sept. 14th, (3 weeks) **Curve Theory:** 1.1-1.3 & 2.1-2.3 in text.

Sept. 17th to Oct. 19th, (5 weeks) **Surface Theory:** 4.1, 4.2, 6.1, 6.2, 6.4, 7.1-7.3, 8.1, 8.2

Oct. 22nd to Nov. 9th, (3 weeks) **Gauss-Bonnet Theorem & Applications:** Chapter 13

Nov. 12th to Dec. 7th, (3 weeks) **Minimal Surfaces & other topics:** Chapter 12

Students with disabilities: If you believe that you need academic adjustments (accommodations) for a disability, please contact the Office of Disability Services (ODS), <http://disabilityservices.syr.edu>, located in Room 309 of 804 University Avenue, or call (315) 443-4498 or TDD: (315) 443-1371 for an appointment to discuss your needs and the process for requesting academic adjustments. ODS is responsible for coordinating disability-related academic adjustments and will issue students with documented Disabilities Accommodation Authorization Letters, as appropriate. Since academic adjustments may require early planning and generally are not provided retroactively, please contact ODS as soon as possible.

Syracuse University values diversity and inclusion; we are committed to a climate of mutual respect and full participation. My goal is to create learning environments that are useable, equitable, inclusive and welcoming. If there are aspects of the instruction or design of this course that result in barriers to your inclusion or accurate assessment or achievement, I invite any student to meet with me to discuss additional strategies beyond academic adjustments that may be helpful to your success.

Ally Statement: I have participated in the safer spaces training program through the LGBT center at Syracuse University. Please let me know if you use a different name than the one that shows up on my roster, and also let me know the pronouns that you use. I strive to use gender-neutral language in the classroom (e.g. your classmate, singular they), but I have old habits and I am not always successful. Feel free to correct me if I make a mistake.

Academic Integrity: Syracuse University's Academic Integrity Policy reflects the high value that we, as a university community, place on honesty in academic work. The policy defines our expectations for academic honesty and holds students accountable for the integrity of all work they submit. Students should understand that it is their responsibility to learn about course-specific expectations, as well as about university-wide academic integrity expectations. The policy governs appropriate citation and use of sources, the integrity of work submitted in exams and assignments, and the veracity of signatures on attendance sheets and other verification of participation in class activities. The policy also prohibits students from submitting the same work in more than one class without receiving written authorization in advance from both instructors. Under the policy, students found in violation are subject to grade sanctions determined by the course instructor and non-grade sanctions determined by the School or College where the course is offered as described in the Violation and Sanction Classification Rubric. SU students are required to read an online summary of the University's academic integrity expectations and provide an electronic signature agreeing to abide by them twice a year during pre-term check-in on MySlice.

The Violation and Sanction Classification Rubric establishes recommended guidelines for the determination of grade penalties by faculty and instructors, while also giving them discretion to select the grade penalty they believe most suitable, including course failure, regardless of violation level. Any established violation in this course may result in course failure regardless of violation level.

For more information and the complete policy, see <http://class.syr.edu/academic-integrity/>

Religious observances policy. Syracuse University's Religious Observances Policy recognizes the diversity of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holy days according to their tradition. Under the policy, students are provided an opportunity to make up any examination, study, or work requirements that may be missed due to a religious observance provided they notify their instructors no later than the end of the second week of classes. For fall and spring semesters, an online notification process is available through MySlice (Student Services -> Enrollment -> My Religious Observances) from the first day of class until the end of the second week of class.