Syllabus $\boxed{\textbf{MAT 554 - M001}}$ Spring, 2015

Time: Monday and Wednesday 12:45-2:05.

Place: Room 316, Carnegie

Instructor: Will Wylie
    Office: 206C Carnegie
    Office hours: Tu 12-1, W 11-12, Th 10:30-11:30 or by appointment.
    Campus Phone: 315-443-1469.
    Email: wwylie@syr.edu.

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

Prerequisites: MAT 412 or 511. In addition to the official prerequisites a good knowledge of multivariable calculus (MAT 397) and linear algebra (MAT 331 or 485) will be very useful in this course.

Description: This is a course about the theory of differentiable curves and 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 mathematically rigorous theory of curves and surfaces was developed during the 18th and 19th centuries and laid the theoretic groundwork for modern differential geometry, which, in addition to being an active area of mathematical research, has many applications, notably in the study of general relativity, electromagnetism, econometrics, and computer graphics.

    The course will be mathematically rigorous, but we will try to also emphasize concrete aspects and indicate some applications. The goal of the course is to introduce the concept of *curvature* and to understand two major topics: Gauss' Theorema Egregium and Plateau's problem (Chapters 10 and 12 respectively in the text). In order to understand these topics, we'll need to cover many of the topics in Chapters 1-9, but we'll also have to leave many interesting ones out. There is some flexibility in what we will cover based on the preferences of the class.

Grading: There will be several homework assignments, a report and presentation, two exams, and a comprehensive final exam. These items will be weighted as follows:

Problem sets & report/presentation:	40%
2 Tests (20% each)	40%
Final Exam*	20%

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

Exams: The midterm exams are tentatively scheduled for

Exam 1	Wednesday, February 11th
Exam 2	Wednesday, March 18th

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.

The Final Exam: Friday, May 1 from 10:15am to 12:15 pm.
All students must take the final exam at this time 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.

Students with disabilities. If you believe that you need 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 for an appointment to discuss your needs and the process for requesting accommodations. ODS is responsible for coordinating disability-related accommodations and will issue students with documented Disabilities Accommodation Authorization Letters, as appropriate. Since accommodations may require early planning and generally are not provided retroactively, please contact ODS as soon as possible. Related link: http://disabilityservices.syr.edu/faculty-staff/syllabus-statement/

Religious observances policy. SU 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 holidays 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 are religious observance provided they notify their instructors before 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. Related link: http://supolicies.syr.edu/studs/religious_observance.htm

Academic Integrity. Syracuse University sets high standards for academic integrity. Those standards are supported and enforced by students, including those who serve as academic integrity hearing panel members and hearing officers. The presumptive sanction for a first offense is course failure, accompanied by the transcript notation Violation of the Academic Integrity Policy. The standard sanction for a first offense by graduate students is suspension or expulsion. Students should review the Office of Academic Integrity online resource Twenty Questions and Answers About the Syracuse University Academic Integrity Policy and confer with instructors about course-specific citation methods, permitted collaboration (if any), and rules for examinations. The Policy also governs the veracity of signatures on attendance sheets and other verification of participation in class activities. Additional guidance for students can be found in the Office of Academic Integrity resource: What does academic integrity mean?

Related links:

The Academic Integrity Policy:
http://academicintegrity.syr.edu/academic-integrity-policy/
Twenty Questions and Answers about the Academic Integrity Policy:
http://academicintegrity.syr.edu/faculty-resources/
What does academic integrity mean?:
http://academicintegrity.syr.edu/what-does-academic-integrity-mean/