

Syllabus for MAT 412
Spring 2019
Introduction to Real Analysis I,

Professor Eugene Poletsky
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Class meetings are in Carnegie 100, TTh 11:00--12:20

Office hours: T 3:30-5:00 PM, Th 12:30-2:00 PM or by appointment

Course Content: Introduction to the foundations of calculus covering topics from the following: the real number system, functions, limits, sequences, infinite series, continuity, and uniform continuity.

- **Chapter 1** Some of this was covered in MAT 375. What is new is the real numbers as a complete ordered field (Sections 1.2 and 1.3). You are responsible for learning or recalling the rest of the material in Chapter 1.
- **Chapter 2** Sequences, Bolzano-Weierstrass theorem, Cauchy sequences (Sections 2.1-2.4).
- **Chapter 3** Limits of functions, Continuity, Uniform Continuity (Sections 3.1-3.4).
- **Chapter 4** Derivatives, Mean Value Theorem, Taylor's Theorem, L'Hopital's rule, Inverse function theorem (Sections 4.1-4.5).

Prerequisites: (MAT 375 OR CIS 375) AND MAT 397.

Textbook: *Introduction to Real Analysis* (4th ed.) by W. Wade, ISBN 9780132296380. The course material is based on Chapters 1-4.

Exams: There will be two tests during the semester and a cumulative final examination, as well as quizzes and/or graded homework. The final exam will be given on Friday, May 3, 12:45-2:45 AM, and at no other time. The course grade will be computed as follows: each term exam counts 25%, homework counts 20% and the final exam counts 30%.

At the end of the semester your average may be curved so that the final grade will be given by the rule:

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=60-69	F= less than 60

Make-ups

No make-up examinations will be given. If you expect to miss an examination for a legitimate reason, discuss this, in advance, with your instructor, who may then substitute the relevant score from your final examination for the missing grade.

Calculator policy: A calculator is not required for this course. In particular, no calculators will be allowed on the exams or quizzes. Use or availability of any calculator or other electronic device on the exams or quizzes will be a violation of the Academic Integrity Policy. You may use calculators for learning purposes and for solving homework. On exams and quizzes complete solutions, and not merely answers, must be presented to receive credit.

Attendance: You are expected to attend class and participate in it. If you miss a class, you are responsible for obtaining notes and any announcements from that class from another student.

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 303 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.

Academic integrity: The Syracuse University Academic Integrity Policy holds students accountable for the integrity of the work they submit. Students should be familiar with the Policy and know that it is their responsibility to learn about instructor and general academic expectations with regard to proper citation of sources in written work. The policy also governs the integrity of work submitted in exams and assignments as well as the veracity of signatures on attendance sheets and other verifications of participation in class activities. Serious sanctions can result from academic dishonesty of any sort. For more information and the complete policy, see <http://academicintegrity.syr.edu>. Complete academic honesty is expected of all students. Any incidence of academic dishonesty, as defined by the SU Academic Integrity Policy, will result in both course sanctions and formal notification of the College of Arts & Sciences.

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 a 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.