

Instructor Dr. G. C. Verchota, Professor of Mathematics, 229A Physics Building, phone 3-1579, email gverchot@syr.edu Office hours: M 8:00-9:30am, T 8:30-10:00am, and by appointment.

Prerequisites A desire and ability to write and understand proofs, MAT 375, MAT 397.

Book *An Introduction to Analysis* Wade, Prentice Hall, fourth edition.

Course Content Chapters 1-4 (some of 5 as time allows), Real numbers, sequences, functions, differentiability, integrability. An approximate order of events is:

- Chapter 1 Most of this was covered in MAT 275. What is new is the Real numbers as a complete ordered field, sections 1.2 and 1.3. You are responsible for recalling, reading the rest of the material in chapter one.
- Chapter 2 Sequences, Bolzano-Weierstrass, Cauchy-sequences in sections 2.1-2.4, and limsup and liminf in section 2.5.
- Test 1
- Chapter 3 limits of functions, Continuity, Uniform Continuity in sections 3.1-3.4
- Test 2
- Chapter 4 Derivatives, Mean Value Theorem, Taylor's Theorem, l'Hospital's rule, Inverse function theorem. Sections 4.1-4.5. Chapter 5 as time permits
- Final Exam on Wednesday December 11, 5:15-7:15pm Carnegie 208

Grading There will be two semester exams (25% apiece) on October 2 and October 30, a final exam (25%), and weekly written homework (25%).

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. You are also welcome to contact me privately to discuss your academic needs although I cannot arrange for disability-related accommodations. Making arrangements with ODS takes time. Do not wait until just before the first test.

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://academic integrity.syr.edu>

Learning goals · understanding the nature and role of deductive reasoning in mathematics

- ability to use and understand the usage of mathematical notation
- ability to follow proofs and other mathematical discourse
- ability to write rigorous proofs of mathematical statements