

MAT 412 – Foundations of Calculus – Spring 2013

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

Prerequisites: MAT 275 or CIS 275, and MAT 397

Instructor: JT Cox, 213B Carnegie, jtcox@syr.edu, 443-1488

Class Time and Location: Tu/Thur 11:00–12:20, Carnegie 124

Office Hours: held in **Carnegie 213B**

- Mon 2:30—4:00
- Wed 2:30—4:00
- At other times by appointment.

Blackboard: We will use blackboard for course announcements.

Texts: (1) A calculus book, (2) *An Introduction to Analysis (4th ed.)* by W. Wade. We will cover parts of Chapters 1-5 as time permits.

Attendance and Participation: Attendance is required! If you miss a class, you are responsible for obtaining notes for that class from a student who attended. It is also your responsibility to find out about any announcements made in class.

Reading: Reading and *re-reading* the definitions, theorems and proofs in the text is **essential** for success in this course! Expect to spend several hours a week just reading!

Homework: Problems will be assigned regularly, some of which will be submitted for grading. No late homework will be accepted. You are encouraged to discuss assigned problems with your classmates and work together. However, the solutions you submit for grading must be written (completely) by you, and not copied from any source. You must write solutions neatly, literately, and in a logical coherent manner on standard 8.5x11 paper.

WeBWork: We may also use a web-based system called WeBWork for calculus review.

Quizzes: Short weekly or even daily quizzes will be given. They will consist of definitions and/or true/false questions and/or example/counterexample type questions. *No make-up quizzes will be given.*

Exams: There will be two midterm exams (dates to be announced) and a final exam. *No make-up exams will be given.* The final exam is scheduled for Friday, May 3, 5:15-7:15pm. The final will be offered at no other time.

Grading: The following *provisional* grading scheme will be used: homework 20%, quizzes 20%, midterm exams 20% each, final exam 20%. This scheme may be modified, and in addition, *attendance may be factored into the course grade!*

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

Disability-Related Accommodations. 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.

Academic Integrity Statement. 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>