MA 322 Advanced Calculus II, Spring 2016

Instructor: Guohui Song, gsong@clarkson.edu
Lecture: MWF 12:00PM - 12:50PM at SC 346
Office Hours: MWF 2-4pm at SC 377
Course Webpage: http://people.clarkson.edu/~gsong/ma322

Textbook


Course Topics

Sequence of functions, Euclidean spaces, metric spaces and metric topology; convergence, continuity, compactness, and completeness in metric spaces; differentiation in Euclidean spaces; spaces of functions. Additional topics may include the Contraction Mapping Theorem and the Baire Category Theorem.

Homework

These will be announced in class and posted on the course webpage. It is strongly recommended that all written homework should be typed with LaTeX. A short introduction about how to use it could be found at the course webpage. Discussion among students is encouraged. However, independent thinking and problem-solving skills are mandatory.

Tests

There will be two midterm exams and the final exam. The dates will be announced in class. Under any circumstances no makeup exam will be given unless the student notifies the instructor by email before the exam and documents the reason for missing the exam.

Grading

Assignments: 30%; Midterms: 20% each; Final Exam: 30%

Academic Integrity

The Clarkson Code of Ethics states: “The Clarkson student will not present, as his or her own, the work of another, or any work that has not been honestly performed, will not take any examination by improper means, and will not aid and abet another in any dishonesty.”
Course Learning Objectives

- Understand the abstract definition of metric and metric spaces.
- Develop a library of examples of metric spaces and their specific properties, beyond Euclidean spaces.
- Connect the three primary characterizations of continuity and understand when the metric spaces characterization is the most useful.
- Learn and understand characterizations of compactness in different metric spaces.
- Learn some of the fundamental theorems of metric space theory, such as the Baire Category Theorem and the Contraction Mapping Theorem, among others.