

MAD 4211 (7222) Advanced Calculus

Fall 2015

<http://people.clas.ufl.edu/kees/files/MAA4211Fall2015.jpg>

Instructor: James Keesling (352)294-2312
LIT 424
kees@ufl.edu

Office Hours: MW 3rd Period

Meeting Time and Place: MWF 2nd Period, 8:30-9:20 am
LIT 201

Textbook: *Introduction to Analysis* by Maxwell Rosenlich (1968, Dover Edition, 1986). A **TI-Nspire CX CAS** calculator is required. The manual can be found at <http://education.ti.com/en/us/guidebook/search/ti-nspire>.

Goal: The student will become familiar with familiar with the techniques of advanced analysis and proofs of the main results.

Syllabus: This course is a two-semester introduction to the basic techniques of analysis. The material to be covered follows: set theory, the real number system, metric spaces, continuous functions, differentiation, Riemann integration, interchange of limit operations, the fixed point theory, implicit function theorem, solutions of differential equations, partial differentiation, multiple integrals.

In addition to covering the principles of analysis and the main proofs, the course will also introduce some applications and methods of calculating using the theory. For this purpose the students are required to have a **TI-NSpire CX CAS** calculator. No other calculator is acceptable. Programs will be available online to download. The calculator will be used for examples in class and needs to be available for class exams.

The material to be covered this semester is the following.

Week 1-2	Set theory and the real number system
Week 3-5	Metric spaces and continuous functions
Week 6-7	Differentiation
Week 8-10	Riemann integration
Week 11-12	Interchange of limit operations
Week 13-14	Fixed Point Theory
Week 15-16	Review

Tests and Grading: There will be two in-class tests and a final exam. The grades will be determined by averaging the tests and final exam scores: 95-100 = A, 90-94 = A-, 87-89 = B+, 83-86 = B, 80-82 = B-, 76-79 = C+, 70-75 = C, 65-69 = D+, 60-64 = D, 0-59 = E.

Final Exam: Thurs, Dec 17, 10:00 am-12:00 pm, LIT 201

Policy for Make-Up Exams: If a student has a known conflict for an exam, the student has the responsibility to make arrangements for a make-up before the exam is given. If a student misses an exam due to an emergency, arrangements must be made as soon as possible for a make-up.

Students with Disabilities: Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.