MAD 4401 Introduction to Numerical Analysis (3216, 17732)  
Fall 2019  
http://people.clas.ufl.edu/kees/files/MAD4401Fall2018.jpg

Instructor: James Keesling  
kees@ufl.edu  
Office Hours: MW 6th Period  
LIT 424  
(352) 294-2312

Meeting Time and Place:  
MWF 8th Period, 3:00 pm – 3:50 pm  
LIT 205


Goal: The student will become familiar with the techniques of numerical analysis and be able to solve various types of mathematical problems using the techniques.

Syllabus: This course is an introduction to the basic techniques of numerical analysis. A major theme in the course is using the computer to solve mathematical problems. A significant topic will be the analysis of error. This is a course in mathematics. So, special attention will be paid to the mathematical theory behind the methods used.

No textbook is required. Class notes will be available online. The TI-Nspire CX CAS will be used in class to investigate examples to clarify the theory. It will also be required for the tests. The tests and final will include examples to be calculated and explained.


Week 1-3  Solving equations, Iteration and Chaos  
Week 4  Polynomial approximation  
Week 5-7  Estimating integrals  
Week 8-9  Estimating derivatives  
Week 10-11  Numerical solution of differential equations  
Week 12-14  Queueing and stochastic simulation  
Week 15  Splines and curve-fitting  
Week 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 12, 5:30 – 7:30 pm, LIT 205

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 that must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.