

MAA4102 (3006) Intro Real Analysis 1
MWF Period 3 (9:35 a.m - 10:25 am) Room: Lit 233

Instructor: Cheng Yu, chengyu@ufl.edu.

Office room: LIT 306.

Office Hours: MF 4 periods or by appointment.

Canvas Messages: Check your emails often so that you do not miss any important announcements.

Prerequisites: MAC 2313 (Calculus 3).

Course Overview. This course explores fundamental calculus concepts, including real numbers, sequences, functions, limits, continuity, and differentiation, with a strong emphasis on theoretical understanding. Students will develop rigorous mathematical reasoning, enhance their proficiency in constructing formal proofs, and deepen their ability to connect and synthesize key concepts.

Textbooks: M. Spivak, Calculus (4th ed.), Publish or Perish Inc. (ISBN: 9780914098911).

Tentative weekly schedule

- W1: Properties of numbers, basic inequalities;
- W2-3: Various number systems, intro to proofs, mathematical induction;
- W4-5: Functions and graphs;
- W6-7: Limits and continuity;
- W8: Properties of continuous functions;
- W9: Supremum and infimum;
- W10: Uniform continuity;
- W11-12: Derivatives and differentiation techniques;
- W13-14: Mean value theorems, L'Hopital's rule, inverse functions, convexity/concavity.

Critical date: Quizzes are scheduled on the following dates:

- Q1: January 31
- Q2: February 24
- Q3: March 25
- Q4: April 23

The dates for take-home exams will be announced during class.

Grade Policy: There will be 3 take-home exams. Please do all problems independently. Each worth 20 points, will be assigned, collected, and graded. 4 quizzes will be given in class, each one is 10 points. The grade scale is as follows:

A : [90, 100].

B+:[85, 90).
B : [80, 85).
B-:[77, 80).
C+:[75, 77).
C : [70, 75).
C-:[68, 70).
D : [60, 68).
F : [0, 60).

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.

U matter, we care Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.