Introduction to Real Analysis I
MAA 4102 Lecture
4 Credit Hours
Spring 2025

Instructor:	Dr. Chamila Gamage
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Office Hours:	MWF Period 6 (12:50 PM - 1:40 PM) in LIT 320
Lecture:	MWF P 5 in FLI 113

Prerequisites MAC 2313 (Calculus 3).

Course Description In this course, we will revisit familiar calculus concepts such as the real numbers, functions of one variable, limits, continuity, and differentiability. But this time, we'll explore them in a more accurate and rigorous manner, and prove the major results along the way.
In addition to mastery of the course content, course objectives include reading, writing, and discovering proofs and constructing proofs and counterexamples in analysis.

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

E-Learning Canvas: E-learning Canvas, a UF course management system, is located at elearning.ufl.edu. Use your Gatorlink username and password to login. All course information including your grade, course homepage, syllabus, lecture outlines, office hours, test locations, mail tool, discussion forum, free help information, etc. can be accessed from this site.

E-mail All communication between student and instructor and between students should be respectful and professional. All official class communications will be sent only to the ufl.edu addresses. Students are responsible for acquiring, checking their email accounts regularly, and any class information sent to their ufl.edu account. Please be sure to sign your name to your e-mails.

Lectures Every Monday, Wednesday, and Friday (except for school holidays and exam days), there will be a 50 minute lecture. These lectures will introduce and provide examples of new course material. Attendance at these lectures is strongly encouraged, as you will have practice questions to work on during class. Lecture note outlines will be available on Canvas before each class.

Schedule:

Week 1: Properties of numbers; inequalities

Weeks 2–3: Number systems; proofs; induction

Weeks 4–5: Functions and graphs

Week 6: Limits

Week 7: Continuity

Week 8: Properties of continuous functions

Week 9: Suprema and infima

Week 10: Uniform continuity

Weeks 11–12: Derivatives

Week 13: Mean value theorems and L'Hôpital's rule

Week 14: Convexity and concavity; inverse functions

Expectations and grading rubric:

Work submitted for a grade in this course will be graded in a rigorous fashion and should be prepared with a good deal of thought and care.
Most of the work required in this course will consist of writing proofs. For a proof worth 10 points, scores will be based on the following guidelines.

0 points.

The work contains no original steps toward a correct solution. This includes work that simply consists of relevant definitions or theorems without interpretation.

3 points.

The work contains some original steps toward a correct solution but does not contain a workable outline of the full solution. This grade is also used if the student has misunderstood the question or made an unwarranted simplifying assumption that makes the problem trivial.

6 points.

The work contains an outline of a correct solution and several steps toward this solution. However, the writing may be unclear, or there may be holes in the argument.

8 points.

The work resembles a full, complete proof, but it has some deficiencies. These may include incomplete sentences, abbreviating words with logical symbols such as those for "for all" or "implies", imprecise definitions, or overlooking trivial cases.

10 points.

The work consists of a full, complete proof and is reasonably well written in complete sentences, without logical symbols. There may be minor typos or clumsy writing that could be improved, but no important steps of the solution are omitted or incorrect.

Exams

There will be **4 non-comprehensive exams**, on the following dates

Exam 1: Wednesday, February 05

Exam 2: Wednesday, February 26

Exam 3: Wednesday, March 26

Exam 4: Wednesday, April 23

and **no final exam**. The fourth exam will replace any previously missed exam score.

Exams will be in-person and closed book, held in the classroom.

Homework

There will also be approximately 10 homework assignments (due almost every week we don't have an exam).

Homework may be submitted either online or in physical form before the start of class on the due date. Both handwritten and typed submissions are acceptable. For homework, you are encouraged to refer to your notes and textbook, and to consult with your classmates.

Late assignments will only be accepted by prior agreement or in the case of an excused absence.

If you have a disagreement with the grading of one of your solutions, I ask that you submit a written request for reconsideration within one month.

The UF grading policy for assigning grade points may be found at https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/

Class Attendance

Attendance is strongly encouraged but is not a component of grades. Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work.

Requirements for class attendance and make-up exams, assignments, and other work in the course are consistent with university policies. See UF Academic Regulations and Policies for more information regarding the University Attendance Policies.

Grading

Midterm exams (no drops): 60%

Homework (1 drop): 40%

The resulting score determines the letter grade according to the following table::

Grading Scale

100 - 93 A	92 - 89 A-	88 - 83 B+	82 - 77 B
76 - 71 B-	70 - 66 C+	65 - 60 C	59 - 55 C-
54 - 50 D+	49 - 40 D		

Students with Learning Disabilities

Students requesting class and exam accommodations must first register with the Dean of Students Office Disability Resource Center (DRC), www.dso.ufl.edu/drc/. That office will provide a documentation letter via email to the course coordinator. This must be done as early as possible in the semester, **at least one week before the first exam**, so there is adequate time to make proper accommodations.

Diversity and Inclusion

The Mathematics Department is committed to diversity and inclusion of all students. We acknowledge, respect, and value the diverse nature, background and perspective of students and believe that it furthers academic achievements It is our intent to present materials and activities that are respectful of diversity: race, color, creed, gender, gender identity, sexual orientation, age, religious status, national origin, ethnicity, disability, socioeconomic status, and any other distinguishing qualities.

Academic Honesty Guidelines

All students are required to abide by the Academic Honesty Guidelines which have been accepted by the University. The academic community of students and faculty at the University of Florida strives to develop, sustain and protect an environment of honesty, trust, and respect. Students are expected to pursue knowledge with integrity. Exhibiting honesty in academic pursuits and reporting violations of the Academic Honesty Guidelines will encourage others to act with integrity. Violations of the Academic Honesty Guidelines shall result in judicial action and a student being subject to the sanctions in paragraph XIV of the Student Code of Conduct. The conduct set forth hereinafter constitutes a violation of the Academic Honesty Guidelines (University of Florida Rule 6C1-4.017).

The Mathematics Department expects you to follow the Student Honor Code. We are bound by university policy to report any instance of suspected cheating to the proper authorities. You may find the Student Honor Code and read more about student rights and responsibilities concerning academic honesty at the link www.dso.ufl.edu/sccr/.

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.

In-Class Recording

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaintto the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A "class lecture" is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To "publish" means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student

Evaluations

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

Important Spring 2025 Academic Dates and Deadlines

Classes Begin	Monday, January 13
Drop/Add	Monday, January 13 - Friday, January 17 (11:59 PM)
Withdrawal deadline (full refund)	Friday, January 17 (11:59 PM)
Withdrawal deadline (25% refund)	Friday, February 7
Drop deadline (no refund)	Friday, April 11 (11:59 PM)
Classes end	Wednesday, April 23

Holidays (no classes)

Martin Luther King Jr. Day	Monday, January 20
Spring Break	Saturday, March 15 - Saturday, March 22

Note: Information in this syllabus is subject to change. Any changes will be clearly announced in class or through e-mail.