

maa4102/5104 Spring 2021

MAA 4102/5104

Sections 3006 (14749), 111 (27506), and 329 (27507) Spring 2021

This course has both face to face and simultaneous synchronous online versions using Zoom. It uses canvas.

To protect student privacy, class meetings will not be recorded.

Instructor and office hours

Scott McCullough

Course Content and Objectives

MAA4102/5104 is the first course in a two course sequence. In this sequence we present a rigorous mathematical treatment of the fundamental ideas of calculus. MAA4102/5104 topics include, the real numbers, sequences and limit points, limits of functions, continuity and differentiation. The emphasis of the course is on theory and proofs.

Because the concepts covered in this course play an important role in the physical sciences and engineering, students in these areas may choose to take this course. **However, no particular applications are discussed in the course.** Students in mathematics, education, and other areas may also choose to take this course. However, **students who intend to pursue graduate study in mathematics should not take this course. These students should take MAA 4211 instead.**

The primary goal of the course is to obtain a sound understanding of the basic mathematical concepts of calculus. A secondary goal is to improve the ability to reason carefully and creatively when dealing with mathematical material.

Lecture notes and optional text books

- Lecture notes for the course are available through canvas.
- If you are looking for other sources, consider the following two texts.
 - Witold A. J. Kosmala, **A Friendly Introduction to Analysis**, second edition, Pearson Prentice Hall, Upper Saddle River,

NJ 07458.

- Robert G. Bartle and Donald R. Sherbert, **Introduction to Real Analysis**, fourth edition, John Wiley & sons, Hoboken, NJ 07030.

Homework.

Ten homework problems will be assigned and graded based upon completion. Each homework is worth 10 points. The best eight will count toward the course grade.

Quizzes.

There will be five in class quizzes each worth 10 points. The best four will count toward the course grade.

Grading

A course total, out of 120, will be based upon the quizzes and homework assignments. Grades will then be assigned according to the scale:

108 A
104 A-
99 B+
96 B
92 B-
87 C+
75 C
66 D

Attendance

Attendance is recommended.

Additional Information:

Grades. Grading will be in accord with the UF policy stated at <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>. Also see the current UF policy on assigning grade points.

Academic Honesty. The course will be conducted in accordance with the University honor code and academic honesty policy

UF students are bound by The Honor Code Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code." On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have questions or concerns please consult with the instructor.

Accommodation for students with disabilities. Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://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.

Online Evaluations. “Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu> . Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.”

Additional Information- Health and Wellness:

- U Matter, We Care:
If you or a friend is in distress, please contact ummatter@ufl.edu or 352-392-1575 so that a team member can reach out to the student.
- Counseling and Wellness Center:
<https://www.counseling.ufl.edu>; 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.
- Sexual Assault Recovery Services (SARS):
Student Health Care Center, 392-1161.
- University Police Department:
392-1111 or 9-1-1 for emergencies, <http://www.police.ufl.edu/>

Additional Information- Academic Resources:

- E-learning technical support
352-392-4357 (option 2)
Learningsupport@ufl.edu
- Career Connections Center:
Reitz Union, 392-1601.
Career assistance and counseling, <https://career.ufl.edu>
- Library Support:
<http://cms.uflib.ufl.edu/ask>

Additional Information- Diversity Statement:

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.

Tentative weekly schedule (TBA)

There will be five parts of the course as follows:

Part 1, Least upper bounds and the real numbers (3 weeks).

Part 2, limits of sequences of real numbers, subsequences, accumulation points, subsequential limit points (4 weeks).

Part 3, limits of real valued functions (3 weeks).

Part 4, continuity of real valued functions, types of discontinuities (2 weeks).

Part 5, differentiation of real valued functions (2 weeks).



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