

**MAC 2311 Introduction to Calculus with Analytic Geometry I**

**Fall 2022**

**MWF Time 4<sup>th</sup> Period Sections 15162, 15163 (LIT 237)**

**MWF Time 7<sup>th</sup> Period Sections 15103, 15180 (LIT 237)**

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Office Hours: TBA

**Teaching Assistants:**

<b>Name</b>	<b>Office Hours</b>	<b>Email</b>	<b>Sections</b>
TBD	TBD	TBD	15162, 15163, 15103, 15180

**Course Description:** MAC 2311 is the first in the three-semester sequence MAC 2311, MAC 2312, and MAC 2313 covering basic calculus. Intended topics will include functions and inverse functions, limits, continuity, differentiation of algebraic and trigonometric functions; applications of derivatives; integration and the fundamental theorem of calculus; applications of definite integrals.

A minimum grade of C (not C-) in MAC 2311 satisfies the four credits of general education mathematics requirement and also satisfies the pure math portion of the state Writing/Math requirement.

**Intended Learning Outcomes:** This course will introduce you to the ideas of limit, derivative and integral for functions of a single variable. Upon completion, you will be able to understand the theory as well as applications. The course will prepare you for MAC2312.

**Prerequisites:** Appropriate score on the ALEKS placement assessment, or MAC 1147 (or its equivalent, both MAC 1140 and MAC 1114) with a C (2.0) or better.

**Recommended Textbook:** There are no required textbooks for this course. We will make use of a free online textbook available at [OpenStax Calculus Volume 1](#). Also, in this course we will use the online platform Xronos which has been developed at UF and is supported by the Office of the Provost and the College of Liberal Arts and Sciences.

**Grades:** Your grade is based on Xronos Homework, Lecture Quizzes, Discussion Quizzes, 3 midterm exams and a final exam.

Assignment	Weight
Xronos Homework	7%
Lecture Quizzes	5%
Class Participation	6%
Discussion Board Participation	2%
Discussion Quizzes	10%
Exams (Three exams, 15% each)	45%
Final Exam	25%

Your grade will be calculated according to the scale below.

A [90,100]; A-[87,90); B+[84,87); B [80,84); B-[77,80); C+[74,77); C [67,74);  
C-[64,67); D+[60,64); D [57,60); D-[54,57); E [0,54)

**Exams Dates:** Exam 1 - September 22<sup>nd</sup>, Exam 2 - October 19<sup>th</sup>, and Exam 3 - November 16<sup>th</sup>.

**Final Exam Date: December 10, 2022. Time: 10:00 AM to 12:30 PM.**

**Xronos Homework:** In this course we will be using both Canvas and the online platform Xronos which is free of charge and will be explained during class. Online homework assignments include lecture quizzes which are due the day before the corresponding class and Xronos homework are due one week after the corresponding class. These assignments must be completed by the specified due

date/time. There will be a total of three dropped lecture quizzes grades and three dropped Xronoss homework grades at the end of the semester.

All assignments will have posted due dates and these due dates will not be extended under any circumstance. Personal computer issues will NOT be a reason to offer any type of extension.

**Class Participation:** Attendance in class both in lecture and discussion section is highly recommended. Students who come to class and participate are more likely to do well in the course. Participation will be a part of your grade and how it is calculated will be explained in class. It will be 6% of your grade and will be based upon your attendance in lectures and group work that is assigned.

Further, following university policy, you may expect a penalty (additional lost points) for attending fewer than 75% of your classes.

**Discussion Board Participation:** Canvas is organized by modules, which pertain to each exam. Module 1 corresponds to all the material related to exam 1. Within each module, there is a discussion board where students are able to ask questions or post answers. This includes, homework, quizzes, exam reviews and lectures. You may earn up to 2 points for each module by:

- Asking a coherent mathematical question. (+1 each)
- Answering a fellow student's questions. (+1 each)

**Discussion Quizzes:** There will be weekly quizzes (except for the first week) during your discussion, based on the homework. Quizzes make up a total of 10% of your grade. Your TA will administer the quizzes and any questions about the grades should be directed to them.

**E-Learning Canvas:** E-learning canvas, a UF course management system, is located at [elearning.ufl.edu](http://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.

You are responsible for verifying that your grades are accurate. **You have one week after a score has been posted to contact your TA if you believe there has been a recording error. There is no grade dispute at the end of the semester.**

**Please note:** Important course information is clearly communicated in this course guide, the MAC 2311 homepage and links in Canvas, and announcements in lecture and discussion. Due to the volume of email received by the instructor and TAs, we cannot reply to each request for this well publicized information. If you cannot find your answer in the resources above, there is also a **Discussion Forum** available in Canvas. Please use this to post questions and to supply answers to your fellow students.

**Communication:** 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 email 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.

**Online course evaluation:** Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>

**Academic Honesty:** 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 UF honor code is available here: <https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>

**Wellbeing:** If you or anyone you know experiences any academic stress, difficult life events, or feelings like anxiety or depression, I strongly encourage you to seek support. The website <https://counseling.ufl.edu/resources> provides a list of on-campus and local resources to support various populations.

**Diversity and Inclusion:** It is my intent that students from all diverse backgrounds and perspectives be well served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength, and benefit. It is my intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, religion, and culture. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups. In particular, I will gladly honor your request to address you by an alternate/ preferred name or gender pronoun. Please advise me of this preference early in the semester so I may make appropriate changes to my own records.

**Students with Disability:** Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center by visiting our [Get Started page](#). It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

**Resources:** In addition to attending your discussion section regularly and visiting your discussion leader, lecture, or the course coordinator, during their office hours, the following aids are available.

- The Math Help Center in Little 215 is open for drop-in assistance with homework Monday through Friday from 9:30 to 4:00. Mathematics graduate students and undergraduate assistants staff it. Please note that this space is not designed for intense one-on-one tutoring, but rather as a resource for quick questions and explanations. You should not expect the staff to help you if you have not at least begun your homework and have specific questions. Moreover, they absolutely will not assist you with quizzes or any other such work.
- The Teaching Center Math Lab, located in SE Broward Hall, is a tutorial service staffed by trained math and science students to provide help with your calculus questions and homework. Tutors will be glad to provide guidance on specific problems after you have attempted them on your own. You may want to attend different hours to find tutors with whom you feel most comfortable. You can also request free one-on-one tutoring.

**Make-Up Policy:** All make-up work must be arranged with your instructor.

- **Exam Conflicts**

1. Exams may be held Monday - Friday from 8:20-10:10PM (periods E2-E3) for the fall and spring terms. If other classes are scheduled during an exam time, instructors must provide make-up class work for students who miss class because of an assembly exam. If two exams are scheduled at the same time, assembly exams take priority over time-of-class exams. When two assembly exams conflict, the higher course number takes priority. Instructors giving make-up exams will make the necessary adjustments.
2. If MAC 2311 is the lower course number, students must inform their instructor in person at least ONE WEEK in advance of the exam date so that appropriate accommodations can be made. Otherwise it may not be possible to reschedule.

- **Make-up Exams**

1. If you are participating in a UF sponsored event or religious observance, you may make up an exam only if you make arrangements with your instructor at least ONE WEEK PRIOR to the event. You must present documentation of a UF sponsored event.
2. If illness or other extenuating circumstances cause you to miss an exam, contact your instructor (no later than 24 hours after the exam) by email. Then, as soon as possible after you return to campus, bring the appropriate documentation to him in Little Hall during office hours. You will be allowed to sign up to take a makeup exam at the end of the semester on TBD.

- **Make-up Xronos Homework:** None

- **Make-up Class Participation Points:** None

**Incomplete:** Students who are currently passing a course but are unable to complete the course because of illness or emergency may be granted an incomplete grade of “I” which will allow the student to complete the course within the first two weeks of the following semester. See the policy on <http://www.math.ufl.edu/fac/incompletes.html>. If you meet the criteria, you must see your instructor before finals week to be considered for an “I”. An “I” only allows you to make up your incomplete work, not redo your work.

## Weekly Schedule

### Week 1

Introduction (Syllabus, Online Review) The Limit of a Function

### Week 2

Calculating Limits Using Limit Laws; Squeeze Theorem Calculating Limits Using Limit Laws; Squeeze Theorem Continuity: definitions, examples, Intermediate Value Theorem

### Week 3

Labor Day - No Class

Continuity: definitions, examples, Intermediate Value Theorem Limits at Infinity; Horizontal Asymptotes

### Week 4

Derivatives and Rates of Change The Derivative as a Function The Derivative as a Function

### Week 5

Derivatives of Polynomials and Exponential Functions Review for Exam 1

Exam 1 (L1-6)

The Product and Quotient Rules

### Week 6

Derivatives of Trigonometric Functions The Chain Rule

Implicit Differentiation

### Week 7

Implicit Differentiation

Derivatives of Logarithmic Functions; Logarithmic Differentiation Homecoming - No Class

### Week 8

Applications of Rates of Change Related Rates

Related Rates

## Week 9

Linear Approximations and Differentials

Review for Exam 2; Exam 2 (L7-15)

Maximum and Minimum Values; Fermat's Theorem; Critical Points

## Week 10

Maximum and Minimum Values; Fermat's Theorem; Critical Points The Mean Value Theorem

How Derivatives Affect the Shape of a Graph

## Week 11

How Derivatives Affect the Shape of a Graph Indeterminate Forms and L'Hopital's Rule Summary of Curve Sketching

## Week 12

Summary of Curve Sketching Optimization Problems Veterans Day - No Class

## Week 13

Optimization Problems

Review for Exam 3; Exam 3 (L16-21) Antidervatives

## Week 14

Areas and Distances Thanksgiving Break - No Class Thanksgiving Break - No Class

## Week 15

The Definite Integral

The Fundamental Theorem of Calculus The Net Change Theorem

## Week 16

The Substitution Rule Review for Final Exam

\* I reserve the right to change anything in this syllabus if needed. Please check canvas for changes.