

Calculus with Analytic Geometry II

MAC 2312 Lecture

4 Credit Hours

Fall 2025

Instructor/Coordinator: Stephen Adams
Office: LIT 326
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Office Hours: MWF Period 6 (12:50 PM - 1:40 PM) in TBA
Lecture: MWF Period 5 in CAR 100
MWF Period 8 in NRN 1020

Instructor: Kwai-Lee Chui
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Office Hours: MW Period 6 (12:50 PM - 1:40 PM)
Lecture: MFW Period 7 in NRN 1020

<u>Teaching Assistants</u>	<u>Office</u>	<u>Office Hours</u>	<u>Email</u>
TBA	TBA	TBA	TBA

Discussion Section	Time	Location	TA
2D83	T Period 2 (8:30 AM - 9:20 AM)	LIT 207	TBA
5855	R Period 2 (8:30 AM - 9:20 AM)	LIT 221	TBA
0941	T Period 3 (9:35 AM - 10:25 AM)	LIT 223	TBA
5860	T Period 3 (9:35 AM - 10:25 AM)	LIT 219	TBA
5867	R Period 3 (9:35 AM - 10:25 AM)	LIT 217	TBA
0942	T Period 4 (10:40 AM - 11:30 AM)	LIT 223	TBA
5871	T Period 4 (10:40 AM - 11:30 AM)	LIT 221	TBA
5873	R Period 4 (10:40 AM - 11:30 AM)	LIT 125	TBA
5874	T Period 5 (11:45 AM - 12:35 PM)	LIT 221	TBA
5878	T Period 5 (11:45 AM - 12:35 PM)	LIT 219	TBA
5885	T Period 6 (12:50 PM - 1:40 PM)	LIT 217	TBA
5886	R Period 6 (12:50 PM - 1:40 PM)	LIT 219	TBA
0703	T Period 7 (1:55 PM - 2:45 PM)	LIT 221	TBA
09C6	T Period 7 (1:55 PM - 2:45 PM)	LIT 219	TBA
09C7	R Period 7 (1:55 PM - 2:45 PM)	MAAT 11	TBA
4150	T Period 8 (3:00 PM - 3:50 PM)	TURL 1105	TBA
4151	R Period 8 (3:00 PM - 3:50 PM)	MAT 4	TBA
09C1	R Period 2 (8:30 AM - 9:20 AM)	LIT 223	TBA
09CH	T Period 2 (8:30 AM - 9:20 AM)	LIT 217	TBA
5828	T Period 3 (9:35 AM - 10:25 AM)	LIT 221	TBA
5831	R Period 3 (9:35 AM - 10:25 AM)	LIT 219	TBA
5835	R Period 4 (10:40 AM - 11:30 AM)	LIT 217	TBA
5838	T Period 5 (11:45 AM - 12:35 PM)	LIT 223	TBA
5840	R Period 5 (11:45 AM - 12:35 PM)	RINK 106	TBA
1E26	T Period 6 (12:50 PM - 1:40 PM)	LIT 219	TBA
1E27	R Period 6 (12:50 PM - 1:40 PM)	LIT 221	TBA
5832	T Period 8 (3:00 PM - 3:50 PM)	LIT 235	TBA
5905	R Period 4 (10:40 AM - 11:30 AM)	MAT 15	TBA
0001	T Period 5 (11:45 AM - 12:35 PM)	LIT 233	TBA
0004	R Period 5 (11:45 AM - 12:35 PM)	GYM 270	TBA
0002	T Period 6 (12:50 PM - 1:40 PM)	LIT 221	TBA
5935	R Period 6 (12:50 PM - 1:40 PM)	LIT 217	TBA
0003	T Period 7 (1:55 PM - 2:45 PM)	LIT 223	TBA
5964	R Period 7 (1:55 PM - 2:45 PM)	MAT 10	TBA
09C8	T Period 8 (3:00 PM - 3:50 PM)	AND 32	TBA
09DF	R Period 8 (3:00 PM - 3:50 PM)	MAT 5	TBA
5891	R Period 8 (3:00 PM - 3:50 PM)	MAT 3	TBA

Prerequisites MAC 2311 with a minimum grade of C or AP/IB/AICE credit for MAC 2311.

Course Description Techniques of integration; applications of integration; differentiation and integration of inverse trigonometric, exponential and logarithmic functions; sequences and series. (Note: Credit will be given for at most one of MAC 2312, MAC 2512 and MAC 3473.)

**General
Education
Objectives and
Learning
Outcomes**

This course is a mathematics (M) course in the UF General Education Program. Completing this course with a minimum grade of C will satisfy the student's State Core Mathematics requirement of the UF General Education Program. Courses in mathematics provide instruction in computational strategies in fundamental mathematics including at least one of the following: solving equations and inequalities, logic, statistics, algebra, trigonometry, inductive and deductive reasoning. These courses include reasoning in abstract mathematical systems, formulating mathematical models and arguments, using mathematical models to solve problems and applying mathematical concepts effectively to real-world situations.

After successful completion of this course students will have demonstrated competency in the following Student Learning Outcomes (SLOs):

- **Content:** *Students demonstrate competence in the terminology, concepts, theories, and methodologies used within the discipline.* After completing this course students will be able to solve problems involving integration techniques, infinite series, and parametric equations.
- **Communication:** *Students communicate knowledge, ideas, and reasoning clearly and effectively in written and oral forms appropriate to the discipline.* Students will communicate mathematical ideas verbally in their discussion sessions and as well as through writing on discussion quizzes and exams.
- **Critical Thinking:** *Students analyze information carefully and logically from multiple perspectives, using discipline-specific methods, and develop reasoned solutions to problems.* Students will apply their knowledge to solve problems concerning topics that include, but are not limited to, techniques of integration, calculation of volumes of revolution, calculation of work, determining the convergence or diverges of infinite series, using power series representations to evaluate functions and integrals, and graphing and calculating areas of polar curves.

**Required
Materials and
Supply Fees**

N/A

Textbook

We will make use of a free online textbook available at [Openstx Calculus Volume 2](#) as well as the online [Guided Learning Calculus 2](#).

**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.

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 2312 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 classmates.

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

Discussion Sections

Discussion sections meet once a week on either Tuesday or Thursday depending on which section you are enrolled in. These meetings give you a valuable opportunity for open discussion of the lecture material and assigned problems in a smaller class setting. **Attendance in discussion is required as it is where assessment of your skills will take place.** However, one period per week is generally not adequate to answer all questions. Be sure to take advantage of the opportunities outside of class for additional help.

Your main resource is your discussion leader. He or she will be available during office hours (or by appointment) to answer your questions about the course material. Your TA is responsible for grading and recording all quiz scores. You must retain all returned papers in case of any discrepancy with your course grade. As mentioned above, **you should check Canvas regularly and consult with your TA if you have any questions about recorded grades. All grade concerns must be taken care of within one week of receiving the score.**

If you have concerns about your discussion class which cannot be handled by your TA please contact the course coordinator.

Exams

Midterm exam dates are as follows:

Exam 1: Thursday, October 2

Exam 2: Tuesday, October 28

Exam 3: Tuesday, November 18

Makeup for Exam 1, Exam 2, and Exam 3: Tuesday, December 2, 6:15 PM - 7:55 PM (tentative)

Final Exam: Monday, December 8, 12:30 PM - 2:30 PM

Make up for Final Exam: Friday, December 12, 3:00 PM - 5:00 PM

There will be three (paper and pencil) midterms throughout the semester. The midterms will consist of two parts. Part 1 will be multiple choice questions. Part 2 of the midterm exams will consist of free response problems.

These midterm exams will take place in the evening, from 8:30 PM to 10:10 PM.

The FINAL EXAM will take place on Monday, December 8 from 12:30 PM to 2:30 PM. Make a note of this now and please inform any interested parties (e.g. your parents) who may be making plans for you around that time (such as purchasing plane tickets to fly home, etc.).

Each midterm exam is worth 15% of your final grade while the final exam is worth 25% of your final grade. No exam grades will be dropped. There are no exam retakes.

Online Homework

In this course we will be using the online platform Xronos which is free of charge and will be explained during class. Online homework assignments will be assigned daily and must be completed by the specified due date. **No assignments can be submitted after the due date without documentation of a University approved absence.** Online homework assignments are worth a total of 10% of your final grade. There will be a total of three dropped homework grades at the end of the semester.

All assignments will have posted due dates and these due dates will not be extended without documentation of a University approved excuse.

Personal computer issues, will NOT be a reason to offer any type of extension. It is strongly recommended that you begin the homework well before the due date to account for any unforeseen difficulties. If you have any issues accessing the online homework, please contact the course coordinator.

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. During each lecture we will work out several examples. To receive class participation credit you need to submit your answers to some of these questions on Canvas by the end of the day the lecture is given. These will be scored based on correctness, but the solutions to the problems will be given in class. Class participation is worth a total of 10% of your final grade. Your lowest three class participation scores will be dropped.

Discussion Quizzes

There will be weekly quizzes during your discussion similar to homework questions and examples from class. Quizzes make up a total of 10% of your grade. The quizzes will be administered by your TA and any questions about the grades should be directed to him or her. If your TA is unable to address your questions, please contact the course coordinator. Your two lowest discussion quizzes will be dropped at the end of the semester.

Make-up Policy

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>. All make-up work must be arranged with the course coordinator unless otherwise stated below.

- **Exam Conflicts - UF during Term Assembly Exam Policy** (catalog.ufl.edu/ugrad/current/regulations/info/exams.aspx):

“During-term examinations are held during regular class times or during assembly exam periods, which are Monday-Friday from 8:20 - 10:10 p.m. (periods E2-E3) for the fall and spring terms and Monday-Friday from 7:00 - 9:45 p.m. (periods E1-E2) for the summer 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. When two exams conflict, assembly exams (multiple sections and enrollment over 300) take precedence over non-assembly exams (single sections and/or enrollment under 300). If two assembly exams conflict, the course with the higher number will take priority. Likewise, if two non-assembly exams conflict, the higher number will again take priority. Instructors giving make-up exams will make the necessary adjustments. Students shall be permitted a reasonable amount of time to make up the material or activities covered in their absence. A reasonable amount of time to make up a during-term exam is before the end of the semester in which the student is enrolled in the class.”

If MAC 2312 is the lower course number, students must inform the course coordinator 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** If you are participating in a UF sponsored event or religious observance, you may make up an exam only if you make arrangements with the course coordinator at least ONE WEEK PRIOR to the event. You must present documentation of a UF sponsored event.

If illness or other extenuating circumstances cause you to miss an exam, contact the course coordinator as soon as possible by email. Then, as soon as possible after you return to campus, provide the appropriate documentation to the course coordinator. You will be allowed to sign up to take a makeup exam at the end of the semester. **The make up for Exam 1, Exam 2, and Exam 3 is tentatively scheduled for Tuesday, December 2, 6:15 PM - 7:55 PM. The make up for the final exam is scheduled during the University’s designated make up period on Friday, December 12, 3:00 PM - 5:00 PM.**

- **Make-up Xronos HW:** You must submit documentation of a University approved absence to the course coordinator in order to make a missed Xronos assignment.

- **Make-up class participation points:** There are no make-ups. If you submit documentation of a University approved absence to the course coordinator, then the missed class participation assignment will be excused.

- **Make-up discussion quizzes:** Missed discussion quizzes can be made up if appropriate documentation is provided. If you miss a discussion quiz, then you should contact your TA as soon as possible to arrange a make-up quiz. **Arrangements must be made within one week of the scheduled quiz or otherwise the quiz grade becomes a 0.**

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 contact the course coordinator before finals week to be considered for an I. An I only allows you to make up your incomplete work, not redo your work.

Grading

Xronos Homework: 10%

Discussion Quizzes: 10%

Participation: 10%

Midterm Exam Average (3 mid-term exams): 45%

Final Exam: 25%

Your final grade will be rounded to the nearest hundredth and a letter grade will be given using the following grading scale:

Grading Scale

90.00-100 A	87.00-89.99 A-	84.00-86.99 B+	80.00-83.99 B
77.00-79.99 B-	74.00-76.99 C+	67.00-73.99 C	64.00-66.99 C-*
60.00-63.99 D+	57.00-59.99 D	54.00-56.99 D-	0-53.99 E

***Note** A grade of C- DOES NOT give Gordon Rule or General Education credit!

For those who take the S-U option: 67.00-100 S 0.00-66.99 U

Approval of the S-U option must be obtained from the course coordinator. The deadline for filing an application with the Registrar and further restrictions on the S-U option are given in the Undergraduate Catalog.

For a complete explanation of current policies for assigning grade points, refer to the UF undergraduate catalog:

catalog.ufl.edu/ugrad/regulations/info/grades.aspx

NOTE: We will not review disputed points at the end of the semester. All grade concerns must be settled within one week of the return of the paper.

Extra Credit

Each midterm exam has 105 points on it but is taken out of 100 points. The final exam has 110 points on it but is taken out of 100 points. These are your only opportunities to earn extra credit this semester. No other extra credit will be offered.

Free Help

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.

- Academic Resources offers various forms of academic support to help students succeed in their studies. All tutoring services are free to UF students, and include tutoring services for biology, chemistry, mathematics, physics and statistics courses within the College of Liberal Arts and Sciences. Check the web page <https://academicresources.clas.ufl.edu/tutoring/> for more information.

In addition, Academic Resources holds reviews before each exam. They also provide videos of reviews and sample test problems. Check the webpage, <https://academicresources.clas.ufl.edu/>, for more information. **All students are encouraged to use the teaching center.**

- Textbooks and solutions manuals are located at reserve desks at Marston Science Library.

- Private Tutors: If after availing yourself of these aids, you feel you need more help, you may obtain a list of qualified tutors for hire at www.math.ufl.edu. Search "tutors".

for information on math confidence and information on joining the Academic Confidence Group.

Calculators

Calculators are **NOT** permitted on exams and discussion assignments. Please avoid using a calculator on homework as it will not help you prepare for the exams.

Cell Phones

Cell phones must be silenced before coming to class. Use (defined as having one physically in your hand) of a cell phone during a test or quiz will be considered contact with another person and will be viewed as a form of academic dishonesty because I cannot be assured in such a circumstance that you have not taken a picture of the test/quiz or sent a text message to someone. As a result, **using a cell phone during a test or quiz for any reason will result in an automatic grade of zero and possible disciplinary action.** Wait until after you have left the room and are finished with the test/quiz to use it.

Music Players

iPods and other music players are not to be used during class tests and quizzes. Having one out during a test or quiz will result in a grade of zero and possible disciplinary action.

Students with Learning Disabilities

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center. See "Get Started With the DRC" Disability Resource Center webpage (<https://disability.ufl.edu/get-started/>). 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.

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

UF students are bound by The Honor 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 Conduct Code specifies a number of behaviors that are in violation of this code and the possible sanctions. See the UF Conduct Code website (<https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>) for more information. If you have any questions or concerns, please consult with the instructor or TAs in this class.

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 complaint to 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. Students can complete evaluations in three ways: [1] The email they receive from GatorEvals; [2] Their Canvas course menu under GatorEvals; or [3] The central portal at <https://my-ufl.bluer.com>. Guidance on how to provide constructive feedback is available at <https://gatorevals.ua.ufl.edu/students/>. Students will be notified when the evaluation period opens. Summaries of course evaluation results are available to students at <https://gatorevals.ua.ufl.edu/public-results/>.

Important Fall 2025 Academic Dates and Deadlines

Classes Begin

Thursday, August 21

Drop/Add	Thursday, August 21 - Wednesday, August 27 (11:59 PM)
Withdrawal deadline (full refund)	Wednesday, August 27 (11:59 PM)
Withdrawal deadline (25% refund)	Friday, September 12
Drop deadline (no refund)	Monday, November 17 (11:59 PM)
Classes end	Wednesday, December 3

Holidays (no classes)

Labor Day	Monday, September 1
Homecoming	Friday, October 17 - Saturday, October 18
Veteran's Day (Observed)	Tuesday, November 11
Thanksgiving Break	Monday, November 24 - Saturday, November 29

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

Fall 2025 Schedule

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1				August 21	August 22 Introduction
Due				No Quiz	
2	August 25 L1 - Integration by Parts 1	August 26 Meet Your TA	August 27 L2 - Integration by Parts 2	August 28	August 29 L3 - Trigonometric Integrals 1
Due		No Quiz		No Quiz	Xronos Tutorial
3	September 1 Labor Day - No classes	September 2	September 3 L4 - Trigonometric Integrals 2	September 4	September 5 L5 - Trigonometric Substitution 1
Due		Quiz 1: L1-L3	Xronos 1	Quiz 1: L2-L3	
4	September 8 L6 - Trigonometric Substitution 2	September 9	September 10 L7 - Partial Fractions 1	September 11	September 13 L8 - Partial Fractions 2
Due		Quiz 2: L4-L5	Xronos 2	Quiz 2: L4-L6	
5	September 15 L9 - Improper Integrals	September 16	September 17 L10 - Areas and Volumes	September 18	September 19 L11 - Disk and Washer Method
Due	Xronos 3	Quiz 3: L6-L8		Quiz 3: L7-L9	Xronos 4
6	September 22 L12 - Shell Method	September 23	September 24 L13 - Probability	September 25	September 26 L14 - Work
Due	Xronos 5, 6	Quiz 4: L9-L11	Xronos 7	Quiz 4: L10-L12	
7	September 29 L15 - Sequences	September 30	October 1 Review for Exam 1	October 2 Exam 1 (L1-L13)	October 3 L16 - Series
Due	Xronos 8	Quiz 5: Attendance	Xronos 9	Quiz 5: Attendance	Xronos 10
8	October 6 L17 - Summing Series	October 7	October 8 L18 - Integral Test	October 9	October 10 L19 - Direct Comparison
Due	Xronos 11	Quiz 6: L15-L16		Quiz 6: L16-L17	

Week	Monday	Tuesday	Wednesday	Thursday	Friday
9	October 13 L20 - Limit Comparison	October 14	October 15 L21 - Alternating Series Test	October 16	October 17 Homecoming - No classes
Due	Xronos 12	Quiz 7: L17-L19	Xronos 13	Quiz 7: L18-L20	
10	October 20 L22 - Ratio/Root Test	October 21	October 22 L23 - Power Series	October 23	October 24 L24 - Power Series Rep. 1
Due	Xronos 14	Quiz 8: L20-L21	Xronos 15	Quiz 8: L21-L22	
11	October 27 Review for Exam 2	October 28 Exam 2 (L14-L22)	October 29 L25 - Power Series Rep. 2	October 30	October 31 L26 - Taylor Series 1
Due	Xronos 16, 17	Quiz 9: Attendance	Xronos 18	Quiz 9: Attendance	
12	November 3 L27 - Taylor Series 2	November 4	November 5 L28 - Taylor Series 3	November 6	November 7 L29 - Power Series Summary
Due		Quiz 10: L25-L26	Xronos 19	Quiz 10: L25-L27	
13	November 10 L30 - Arc Length	November 11 Veteran's Day - No classes	November 12 L31 - Parametric Equations	November 13	November 14 L32 - Calculus of Parametric Curves
Due	Xronos 20	No Quiz	Xronos 21	Quiz 11: Attendance	Xronos 22
14	November 17 Review for Exam 3	November 18 Exam 3 (L23 - L30)	November 19 L33 - Polar Coordinates	November 20	November 21 L34 - Graphing Polar Curves
Due	Xronos 23	Quiz 11: Attendance	Xronos 24	Quiz 12: Attendance	Xronos 25
15	November 24 Thanksgiving Break	November 25 Thanksgiving Break	November 26 Thanksgiving Break	November 27 Thanksgiving Break	November 28 Thanksgiving Break
Due					
16	December 1 L35 - Calculus of Polar Curves	December 2	December 3 L36 - Polar Area	December 4 Reading Day - No Classes	December 5 Reading Day - No Classes
Due	Xronos 26	Quiz 12: Attendance			Xronos 27, 28

Monday, December 8 - Final Exam (12:30 PM - 2:30 PM) (Cumulative L1-36)