UUPC Approval 2/26/24
UFS Approval _____
SCNS Submittal _____
Confirmed _____
Banner Posted _____
Catalog _____

# FAU

**FLORIDA ATLANTIC UNIVERSITY**

## COURSE CHANGE REQUEST
## Undergraduate Programs

**Department** Mathematics and Statistics

**College** Science

| *Current* Course Prefix and Number | MAC 2311 | *Current* Course Title | Calculus with Analytic Geometry I |
|---|---|---|---|

*Syllabus must be attached for ANY changes to current course details. See Template. Please consult and list departments that may be affected by the changes; attach documentation.*

**Change title to:**

**Change prefix**

    From:             To:

**Change course number**

    From:             To:

**Change credits***

    From:             To:

**Change grading**

    From:             To:

**Change WAC/Gordon Rule status***

    Add ☐        Remove ☐

**Change General Education Requirements****

    Add ☐        Remove ☐

*See Definition of a Credit Hour.
**WAC/Gordon Rule criteria must be indicated in syllabus and approval attached to this form. See WAC Guidelines.
***GE criteria must be indicated in syllabus and approval attached to this form. See Intellectual Foundations Guidelines.

**Change description to:**

In this course, students will develop problem solving skills, critical thinking, computational proficiency, and contextual fluency through the study of limits, derivatives, and definite and indefinite integrals of functions of one variable, including algebraic, exponential, logarithmic, and trigonometric functions, and applications. Topics will include limits, continuity, differentiation and rates of change, optimization, curve sketching, and introduction to integration and area.

**Change prerequisites/minimum grades to:**

**Change corequisites to:**

**Change registration controls to:**

Please list existing and new pre/corequisites, specify AND or OR and include minimum passing grade (default is D-).

| **Effective Term/Year for Changes:** | 2024 Summer | **Terminate course? Effective Term/Year for Termination:** | |
|---|---|---|---|

**Faculty Contact/Email/Phone** Yuandan Lin, lin@fau.edu, 561-297-3343

| *Approved by* | *Date* |
|---|---|
| Department Chair _____ | Jan. 26, 2024 |
| College Curriculum Chair _____ | 02 / 01 / 24 |
| College Dean _____ | 2/1/24 |
| UUPC Chair _Korey Sorge_ | 2/26/24 |
| Undergraduate Studies Dean _Dan Meeroff_ | 2/26/24 |
| UFS President _____ | _____ |
| Provost _____ | _____ |

Email this form and syllabus to mjenning@fau.edu seven business days before the UUPC meeting.

# FLORIDA ATLANTIC UNIVERSITY

## MAC 2311-XXX XXXXX

### Calculus with Analytic Geometry 1

**Date:** XXX
**Building:** TBD **Room:** TBD
**4 Credit(s)**
**Spring 2024 - 1 Full Term**

## Instructor Information

XXX
**Email:** XXX
**Office:** XXX
**Office Hours:** TBD
 **Phone:** XXX

## Course Description

**Calculus with Analytic Geometry 1**
Gordon Rule, computational
Prerequisites: MAC 1147 or MAC 2210, or both MAC 1140 and MAC 1114, and pretest required; all courses with grades of "C" or better

In this course, students will develop problem solving skills, critical thinking, computational proficiency, and contextual fluency through the study of limits, derivatives, and definite and indefinite integrals of functions of one variable, including algebraic, exponential, logarithmic, and trigonometric functions, and applications. Topics will include limits, continuity, differentiation and rates of change, optimization, curve sketching, and introduction to integration and area.

## Prerequisites/Corequisites

**Prerequisite(s): One of the following:**

- MAC 1147 Graduate / Undergraduate (Minimum Grade of C)
- MAC 2210 Graduate / Undergraduate (Minimum Grade of C)
- MAC 1140 Graduate / Undergraduate (Minimum Grade of C) and
  MAC 1114 Graduate / Undergraduate (Minimum Grade of C) MPPTS
  (Minimum Grade of 075)
- MPF1 (Minimum Grade of 050)

## Instructional Method

**In-Person**
Traditional concept of in person. Mandatory attendance is at the discretion of the instructor.

In this in-person class, you must log into Canvas with your FAU ID and Password to access the materials and assignments in this course. If you do not know your FAU ID or Password, contact OIT for help.

This course is organized into modules by lecture date. Unless otherwise specified, each module opens at 7:00am on the day of the corresponding lecture. The course begins with the Start Here module, which will familiarize you with the organization and navigation of the course. The majority of assignments for this course are Worksheets/Homework and Pre-worksheet Quizzes. These are assigned during each lecture and are due at the start of the next lecture (worksheets/homework must be uploaded to Gradescope through Canvas).

## Required Texts/Materials

**Calculus: Early Transcendentals**
**Authors:** Stewart
**Edition:** 9th edition

## Learning Assistant (LA) Program

This section will incorporate the LA Program. LAs are pedagogically trained, fellow undergraduate students who have been successful in this subject. This LA based curriculum is designed to allow students the opportunity to learn by doing. LAs will assist students in actively learning and critically thinking about course content through collaborative group work built into the course.

**LA's for this class:**

| LA: TBD | LA: TBD |
|---|---|
| email: | email: |
| MLC Office Hours (front of GS211): | MLC Office Hours (front of GS211): |

**LA Office Hours (possible return of 20% per homework)**

In most cases, homework will be graded no later than by the lecture after it was due. Students will be given the opportunity to raise their grade 20% points by attending LA office hours at the MLC (hours are listed above) and demonstrating to the LAs that they have learned any missed material. Students will have ONE WEEK (from the date homework was due to be graded) to take advantage of this opportunity. Students are expected to come prepared to explain what was missed and answer LA questions to verify understanding. Students will not receive the extra points simply for showing up. Once the LA is convinced that the student understands all the missed homework, they will add the points directly in canvas. Homework corrections take precedence at LA office hours. Therefore, if students are struggling with understanding the content, they may need to make use of FREE tutoring through the Math Learning Center (MLC) (information below). If you attend LA hours when less than 20 minutes are remaining, you may be asked to attend another session where there is time to sufficiently review your work. All homework misunderstandings must be addressed to the LA's satisfaction or there will be no grade change. It is the STUDENT's responsibility to make sure the LA adds the points to their Canvas once corrections are completed.

# Course Objectives/Student Learning Outcomes

**Student Learning Outcomes:**

- Students will calculate a limit, derivative, or integral using appropriate techniques.
- Students will determine the continuity and differentiability of a function.

- Students will use limits and derivatives to analyze relationships between the equation of a function and its graph.
- Students will apply differentiation techniques to model and solve real world problems.
- Students will use integrals and the Fundamental Theorem of Calculus to analyze the relationship between the integral of a function and the related area.

## Faculty Rights and Responsibilities

Florida Atlantic University respects the rights of instructors to teach and students to learn. Maintenance of these rights requires classroom conditions that do not impede their exercise. To ensure these rights, faculty members have the prerogative to:

• Establish and implement academic standards.

• Establish and enforce reasonable behavior standards in each class.

• Recommend disciplinary action for students whose behavior may be judged as disruptive under the Student Code of Conduct University Regulation 4.007.

## Disability Policy

In compliance with the Americans with Disabilities Act Amendments Act (ADAAA), students who require reasonable accommodations due to a disability to properly execute coursework must register with Student Accessibility Services (SAS) and follow all SAS procedures. SAS has offices across three of FAU's campuses – Boca Raton, Davie and Jupiter – however disability services are available for students on all campuses. For more information, please visit the SAS website at www.fau.edu/sas/.

## Course Evaluation Method

This LA based curriculum is designed to allow students to *learn* calculus by *doing* calculus. Each inclass lesson consists of approximately 50-60 minutes of lecture followed by approximately 50-60 minutes of group work. Students will be given worksheets with applications and practical exercises related to the new material and will work through these exercises in small groups. ***Students are expected to be present for the entire class to receive credit for the worksheet/homework*** (lecture and small group) and to engage with each other when working in small groups.

**Worksheet/Homework Assignments (total 19%):**

For each section of the textbook, students will receive a worksheet during the group work portion of class. Students should make use of LA group work sessions to work together on these worksheets. Included at the end of each worksheet are the assigned textbook problems for the same section. The homework assignment for each textbook section is to complete and submit the worksheet problems AND the assigned textbook problems as a *single PDF to Gradescope* (see details below about online submissions).

**Grading & Online Submission of Homework through Gradescope via Canvas:**

Some worksheet/homework problems will be graded for completion while others will be graded for accuracy. Students will not be made aware of how problems will be graded ahead of time. Each worksheet/homework assignment MUST be submitted through online platform Gradescope (via Canvas). In this remote setting, online submissions require careful formatting. All submissions will be made as ONE pdf with multiple pages. You may download (or view) the template from Gradescope – you MUST follow the template to ensure proper grading. If you experience any submission issues, email your instructor immediately and attach your pdf to that email. Regrade requests will be available for a specific period of time following grading completion.

It is the STUDENT'S responsibility to ensure that all submissions are done completely, correctly, legibly, and on time. ONLY what has been submitted to Gradescope by the due date will be graded; forgotten pages cannot be added later, and uploads that did not work or are unreadable will be graded as ZERO. There are NO EXCEPTIONS for this—including the first assignment. Students are encouraged to upload assignments EARLY to avoid computer issues: if a student's computer won't

upload an assignment at the last minute and causes the student to miss the deadline, the student will receive a ZERO on the assignment.

**Pre-worksheet Quiz (total 2%):**

For each textbook section, students will be given a pre-worksheet (found in the appropriate module). The pre-worksheet contains mostly prerequisite reminders and requires you to read material in the textbook before we cover it in the next lecture. A pre-worksheet quiz can be found in the appropriate Canvas module and will be due at the start of the next class. *You do not need to turn in the actual pre-worksheet* as questions for the quiz are taken DIRECTLY from it. Therefore, you should complete the pre-worksheet before attempting the quiz. You will have two attempts, 15 minutes each attempt, and the best score will be kept.

To be clear, all worksheets/homework are due at the start of lecture and must be uploaded to Gradescope via Canvas, following the provided template, by that time. All pre-worksheet quizzes are due at the start of the lecture covering that material. Late assignments are graded as a 0 unless you have a documentable reason.

## Code of Academic Integrity

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards, because it interferes with the university mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see University Regulation 4.001.

## Attendance Policy Statement

Students are expected to attend all their scheduled University classes and to satisfy all academic objectives as outlined by the instructor. The effect of absences upon grades is determined by the instructor, and the University reserves the right to deal at any time with individual cases of non-attendance. Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations, or participation in University-approved activities. Examples of University-approved reasons for absences include participating on an athletic or scholastic team, musical and theatrical performances, and debate activities. It is the student's responsibility to give the instructor notice prior to any anticipated absences and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student's final course grade as a direct result of such absence.

Regular attendance during lectures, LA sessions, and LA office hours is expected. To minimize disruption to the learning environment, you are requested to arrive on time and not leave until the end of class. Additionally, you must be in attendance to receive the worksheets for each lecture and therefore, poor attendance will negatively affect your homework grade.

## Religious Accommodation Policy Statement

In accordance with the rules of the Florida Board of Education and Florida law, students have the right to reasonable accommodations from the University in order to observe religious practices and beliefs regarding admissions, registration, class attendance, and the scheduling of examinations and work

assignments. University Regulation 2.007, Religious Observances, sets forth this policy for FAU and may be accessed on the FAU website at www.fau.edu/regulations.

Any student who feels aggrieved regarding religious accommodations may present a grievance to the executive director of The Office of Civil Rights and Title IX. Any such grievances will follow Florida Atlantic University's established grievance procedure regarding alleged discrimination.

## Time Commitment Per Credit Hour

For traditionally delivered courses, not less than one (1) hour of classroom or direct faculty instruction each week for fifteen (15) weeks per Fall or Spring semester, and a minimum of two (2) hours of out-of-class student work for each credit hour. Equivalent time and effort are required for Summer Semesters, which usually have a shortened timeframe. Fully Online courses, hybrid, shortened, intensive format courses, and other non-traditional modes of delivery will demonstrate equivalent time and effort.

## Course Grading Scale

| Letter Grade | Letter Grade |
|:---:|:---:|
| A | 90 - 100% |
| A- | 88 - 89% |
| B+ | 85 - 87% |
| B | 80 - 84% |
| B- | 77 - 79% |
| C+ | 75 - 76% |
| C | 70 - 74% |
| D | 55 - 69% |
| F | Below 55 |

**Course Examinations (3 exams -- total 54% plus cumulative final exam -- 25%)**

We will have 3 midterm exams, each worth 18% of the final course grade, and a cumulative final exam worth 25% of the final course grade. No books, calculators, or smart devices are allowed during exams. No makeup exams will be given without a documentable reason.

**Tentative exam dates**

Exam 1     The 5th Week of Lectures

Exam 2     The 10th Week of Lectures
Exam 3     The 14th Week of Lectures
Final Exam Final Exam Week as Specified by the Registrar

If the exam dates need to be moved, new dates will be announced during class and via Canvas Announcement.

**Grade Distribution**

| | |
|---|---|
| Homework (Worksheet+book problems) | 19% |
| Pre-worksheet Quizzes | 2% |
| Exams | 54% (18% each) |
| Final Exam | 25% |

# Grade Appeal Process

You may request a review of the final course grade when you believe that one of the following conditions apply:

• There was a computational or recording error in the grading.

• The grading process used non-academic criteria.

• There was a gross violation of the instructor's own grading system.

University Regulation 4.002 of the University Regulations contains information on the grade appeals process

# Policy on Make-up Tests, Late work, and Incompletes

**Late Assignments Policy**

Students are responsible for arranging to make up work missed due to a legitimate excuse, such as family funerals, military obligations, court-imposed legal obligations, religious observation, or participation in University-approved activities. Examples of University-approved reasons for absences include participating on an athletic or scholastic team, musical and theatrical performances and

debate activities. It is the student's responsibility to give the instructor notice prior to any anticipated absences and within a reasonable amount of time after an unanticipated absence, ordinarily within 48 hours. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student's final course grade as a direct result of such absence. Any excusable absence must be documented by a verifiable source, and the instructor must be notified AT LEAST ONE WEEK prior to the test date.

Pre-worksheet and Homework assignments that are late without documentable reason will be graded as a zero. Please communicate with your instructor within 48 hours of the due date and a makeup arrangement date MAY be set (at the discretion of the instructor). If communication occurs more than 48 hours after the due date, no arrangement will be made, and the score will remain zero.

**Exam Make-up Policy**

If a student misses a test due to an emergency, the instructor must be notified WITHIN 24 HOURS after the test, and written verifiable documentation is required. Students will not be penalized for absences due to participation in University-approved activities provided they notify their instructor and make appropriate arrangements well in advance of any test. Similarly, reasonable accommodations will be made for students participating in a religious observance. Travel plans are NOT emergencies. Exams missed without approved documentation will receive a grade of 0 (zero).

**Incomplete Grade Policy**

The University policy states that a student who is passing a course but has not completed all work due to exceptional circumstances, may, with consent of the instructor, temporarily receive a grade of incomplete (I). The assignment of the I grade is at the discretion of the instructor but is allowed only if the student is passing the course.

# Policy on the Recording of Lectures

Students enrolled in this course may record video or audio of class lectures for their own personal educational use. A class lecture is defined as a formal or methodical oral presentation as part of a university course intended to present information or teach students about a particular subject. Recording class activities other than class lectures, including but not limited to student presentations (whether individually or as part of a group), class discussion (except when incidental to and incorporated within a class lecture), labs, clinical presentations such as patient history, academic exercises involving student participation, test or examination administrations, field trips, and private

conversations between students in the class or between a student and the lecturer, is prohibited. Recordings may not be used as a substitute for class participation or class attendance and may not be published or shared without the written consent of the faculty member. Failure to adhere to these requirements may constitute a violation of the University's Student Code of Conduct and/or the Code of Academic Integrity.

## Counseling and Psychological Services (CAPS) Center

Life as a university student can be challenging physically, mentally and emotionally. Students who find stress negatively affecting their ability to achieve academic or personal goals may wish to consider utilizing FAU's Counseling and Psychological Services (CAPS) Center. CAPS provides FAU students a range of services – individual counseling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well-being. For more information, go to [http://www.fau.edu/counseling/](http://www.fau.edu/counseling/)

## Student Support Services and Online Resources

- [Center for Learning and Student Success (CLASS)](#)
- [Counseling and Psychological Services (CAPS)](#)
- [FAU Libraries](#)
- [Math Learning Center](#)
- [Office of Information Technology Helpdesk](#)
- [Center for Global Engagement](#)
- [Office of Undergraduate Research and Inquiry (OURI)](#)
- [Science Learning Center](#)
- [Speaking Center](#)
- [Student Accessibility Services](#)
- [Student Athlete Success Center (SASC)](#)
- [Testing and Certification](#)
- [Test Preparation](#)
- [University Academic Advising Services](#)
- [University Center for Excellence in Writing (UCEW)](#)
- [Writing Across the Curriculum (WAC)](#)

**FREE MATH TUTORING**

The MLC provides the following FREE tutoring for all FAU students in their math courses:

- **ONLINE:** Please see https://www.fau.edu/mlc/remote/ for available days/times and links to online tutoring. All tutoring is drop-in (no appointments are needed) and is available via Zoom.
- **IN PERSON:**
  1. Drop-in tutoring in the MLC GS211 during all hours of operation
  2. Monday – Thursday: 10am – 5pm
  3. Friday: 10am – 4pm
  4.  Small group tutoring by appointment is available (check the MLC webpage for instructions)

Please go to https://www.fau.edu/mlc/ for more information OR email mlc@fau.edu should you need further information or have questions.

## Course Topical Outline

| | |
|---|---|
| Week 1 | Syllabus, tangent and velocity problems, limit of a function, calculating limits using limit laws |
| Week 2 | continuity, limits at infinity, horizontal asymptotes |
| Week 3 | derivatives and rates of change, derivative as a function |
| Week 4 | derivatives of polynomials and exponential functions, product and quotient rules; exam review |
| Week 5 | Exam 1; derivatives of trigonometric functions |
| Week 6 | chain rule, implicit differentiation |
| Week 7 | derivatives of logarithmic and inverse trigonometric functions, related rates |
| Week 8 | maximum and minimum values, derivatives and the shape of a graph |
| Week 9 | curve sketching; exam review |
| Week 10 | Exam 2; mean value theorem, indeterminate forms and l'Hôpital's rule |
| Week 11 | optimization problems, antiderivatives |
| Week 12 | area and distance problems, definite integrals |
| Week 13 | fundamental theorem of calculus, indefinite integrals, exam review |
| Week 14 | Exam 3; substitution rule |
| Week 15 | final exam review, Reading Day |

# Math and Quantitative Reasoning Syllabus Description

## Intellectual Foundation (General Education) Program Outcomes.

Mathematics is a peculiarly human endeavor that attempts to organize our experience in a quantitative fashion. It aids and supplements our intuitions about the physical universe and about human behavior. The Mathematics and Quantitative Reasoning requirement is intended to give students an appreciation of mathematics and prepare them to think precisely and critically about quantitative problems.

Students who satisfy the Mathematics and Quantitative Reasoning requirement will be able to:

- Identify and explain mathematical theories and their applications.
- Determine and apply appropriate mathematical and/or computational models and methods in problem solving.
- Display quantitative literacy.