FLORIDA POLYTECHNIC UNIVERSITY

Welcome to MAC 2311 – Calculus I Summer A 2025

Calculus is a critical and foundational course for all degree programs at Florida Poly. In this course, you will learn fundamental techniques in differentiation and integration, as well as gain a deep conceptual grasp of important ideas in mathematics. Calculus 1 introduces mathematical modeling and has a strong emphasis on problem solving. The course is designed to be fair but challenging.

Success in mathematics requires regular attendance and a consistent work ethic. Taking a serious and professional approach to studying and doing homework is the best way to ensure you meet the learning outcomes for the course. Be familiar with the academic policies outlined on this syllabus and see your instructor with any questions or concerns.

Official Email Address
Florida Polytechnic University email is the official method of communication for the University. Students are required to check their email frequently (at least once per day). We cannot reply to any email received from an address other than those that end in floridapoly.edu.

Exams
Midterms are common and will be taken in person in the evening 6-7:30 pm. Dates are set: 1/28 (Exam 1), 2/25 (Exam 2), and 4/1 (Exam 3). Exam dates/locations are subject to change, and you should refer to the Academic Calendar website for the most up-to-date exam schedules. Exam dates/locations will also be announced via Canvas at least one week before the scheduled event. Students should make arrangements ahead of time to be available for those evening exams.

Course Information

- **Course Number and Title**: MAC 2311 Analytic Geometry and Calculus I Section 1
- **Credit Hours:** 4
- **Academic Term:** Summer A 2025

Instructor Information

- **Instructor:** Aaron Bardall
- **Office Location:** IST 2005
- **Office Hours**:
- **Email address**: abardall@floridapoly.edu
- **Meeting Time/Location:**

Course Delivery and Course Description

- **Delivery Mode**: Face-to-face.
- **Course Website**: Canvas course site
- **Official Catalog Course Description**: An introduction to differentiable functions and their applications. Topics include techniques of differentiation, an understanding of limits and continuity, optimization, linear approximation, anti-derivatives, the definite integral, and the Fundamental Theorem of Calculus. Applications involving exponential, logarithmic, and trigonometric functions are highlighted.
    - **Course Pre and/or Co-Requisites**: A grade of C in a MAC course numbered 1147 or higher or IB credit for a MAC course numbered 1147 or higher.
    - **Communication/Computation Skills Requirement (6A-10.030)**: No
- **Required Texts and Materials:**

- Textbook: All course content is organized and communicated via the course's Canvas page where links are provided that take students to relevant online textbook sections and other recourses. These resources vary from week to week. Therefore, it is essential for you to visit Canvas frequently to know where to look for additional help for each topic. OpenStax Calculus Volume 1 is free and online, and is our primary resource for content, readings, and problems (Textbook**:** OpenStax Calculus Volume 1, https://openstax.org/details/books/calculus-volume-1). As mentioned above, we also use other resources, for example, OpenStax University Physics Volume 1 (https://openstax.org/books/university-physics-volume-1/pages/preface)

- Edfinity – An online tool for homework and assessment. Further information, including enrollment instructions, will be provided on Canvas and by your instructor. Do not enroll until told to do so by your instructor.
- Calculators: The required calculator is the TI-30XIIS. No other calculators, including graphing calculators, are allowed.
- Laptops: Laptops will sometimes be required in class (see Canvas for additional details on what laptops are suitable). During some classes, some cell phones may be appropriate substitutes when a laptop is not available. For example, we will often need technology that can adequately run Desmos or Excel.

Course Objectives and Outcomes

- **Course Objectives**: To help the students build up a solid foundation in mathematical reasoning by acquiring important building blocks and skills. Also, giving the students the tools to apply the learned knowledge to solve routine and non-routine problems with emphasis placed on solving applications by mathematical modeling.
- **Course Learning Outcomes**:
  1. Illustrate fundamental understanding and modeling uses for critical classes of STEM functions: linear, power, exponential, logarithmic, sinusoidal, and sigmoidal.
  2. Interpret, use, and calculate derivatives of basic STEM functions and simple combinations of STEM functions.
  3. Interpret, use, and calculate anti-derivatives of basic STEM functions and simple combinations of STEM functions.
  4. Appreciate and demonstrate a computational and conceptual understanding of average and instantaneous rates of change.
  5. Demonstrate a computational and conceptual understanding of accumulation of a function.
  6. Use computers as appropriate to assist in analyzing and solving mathematical problems. Recognize data as fundamental to mathematical work.
  7. Communicate solutions to multi-step mathematics problems through careful, organized, and well-annotated work.

  This course supports the following General Education competencies:
  - Demonstrate fluency in mathematical concepts.
  - Interpret quantitative data to derive logical conclusions.
  - Determine appropriate mathematical and computation models and methods in problem-solving.
  - Apply appropriate mathematical and computational models and methods in problem-solving to produce valid results.

Course Policies

Attendance

- Students are expected "to attend all of their scheduled University classes and to satisfy all academic objectives as defined by the instructor" (University Policy, FPU-5.0010AP).
- Attendance will be tracked using the A+ Attendance system. The total number of classes attended will determine your attendance grade. Note: Coming to class to get the attendance code and then leaving is

not permitted. Furthermore, obtaining the attendance code from another student and submitting it when not in class is a violation of the Academic Integrity Policy.

Participation

Students are expected to participate in the classroom experience. The use of earbuds/headphones during class is specifically not allowed and students who engage in this behavior may be asked to leave the class for the day (noting exceptions for authorized accommodations). Persistent problems with participation may result in a code of conduct referral.

Late Work/Make-up work

- Homework submitted up to 24 hours late will be accepted with a 20% penalty. No submissions will be accepted more than 24 hours late. Failing in submitting by the deadline due to technical issues is still considered a late submission. It is your responsibility to ensure that you are sending the correct file. You will not be able to submit the correct file after the due date passes regardless of the reason why you submitted the incorrect one in the first place. Extensions without penalty may be granted on a case-by-case basis. Please communicate with your instructor.
- Make-up exams/quizzes will be given only in extreme circumstances with a documented excuse. If you will miss an exam because you are participating in a college-sponsored activity, inform your instructor before the exam and provide them with documentation.

Grading Scale

Grade	A	B+	B	B-	C+	C	D	F
Percentage	90%	87%	83%	80%	77%	70%	60%	< 60%
GPA	4.0	3.33	3.0	2.67	2.33	2.0	1.0	0.0

Assignment/Evaluation Methods

Handwritten homework	10%
Edfinity homework	5%
Attendance	3%
Projects	10%
Quizzes	10%
Exam 1	15%
Exam 2	15%
Exam 3	15%
Final Exam	17%
Total	100%

- **Homework**: Homework will be assigned in Canvas on a regular basis and will be covering some important topics to get well-prepared for exams. Homework will usually have two parts. One portion of the homework will be completed completely online through a homework system called Edfinity (details for enrolling in Edfinity can be found on the Canvas site). Another portion of homework will be handwritten, in which you will scan your work and submit it in a pdf form through Canvas. Communicate solutions to multi-step mathematics problems through careful, Organized, and well annotated work. At the end of the semester, your lowest handwritten homework score and your lowest Edfinity homework score will be dropped.
- **Projects:** Projects will be assigned during the semester with specified topics. Topics will be discussed in class and submit your project through Canvas. They will be graded based on presentation, completeness, and correctness.
- **Quizzes:** Quizzes will be given in-class, approximately on the week specified in the schedule below. One lowest quiz will be dropped.
- **Exams**: There will be three common exams during the semester, tentatively on the dates specified in the schedule below.
- **Final Exam:** There will be a common, comprehensive exam at the end of the semester. Your lowest exam score may be replaced by your final exam score if that would improve it, up to a maximum of 80%. Note: The final may not be used to replace a missed exam or a score of zero. It may only be used to replace a

score for an exam on which you made a legitimate effort.

Course Schedule (Subject to Change)

- Important Dates: https://floridapoly.edu/academics/academic-calendar/index.php

Week	Dates	Topics	Important Dates
1	5/12-5/16	3.1 Position, Displacement, and Average Velocity: Physics 3.1; 3.2 Instantaneous Velocity and Speed: Physics 3.2; 3.3 Average and Instantaneous Acceleration: Physics 3.3 3.6 Finding Velocity and Displacement from Acceleration: Physics 3.6; 2.1 A Preview of Calculus: Calculus 2.1; 2.2 The Limit of a Function: Calculus 2.2;	**Quiz 1 Thurs 5/15** **Project 1 Due Fri 5/16** Drop/Add period ends 5/14 Withdrawal no academic penalty deadline 5/14
2	5/19-5/23	4.6 Limits at Infinity and Asymptotes: Calculus 4.6; 3.1 Defining the Derivative: Calculus 3.1; 3.2 The Derivative as a Function: Calculus 3.2 3.4 Derivatives as Rates of Change: Calculus 3.4 3.3 Differentiation Rules: Calculus 3.3	**Exam 1 Wed 5/21** **Project 2 Due Fri 5/23**
3	5/26-5/30	3.5 Derivatives of Trigonometric Functions: Calculus 3.5 3.9 Derivatives of Exponential and Logarithmic Functions: Calculus 3.9 3.6 Chain Rule: Calculus 3.6 4.2 Linear Approximations and Differentials: Calculus 4.2	**No Class Mon 5/26 (Memorial Day)** **Quiz 2 Tues 5/27**
4	6/2-6/6	4.3 Maxima and Minima: Calculus 4.3 4.5 Derivatives and the Shape of a Graph: Calculus 4.5 4.7 Applied Optimization Problems: Calculus 4.7 3.8 Implicit Differentiation: Calculus 3.8	**Exam 2 Mon 6/2** **Project 3 Due Fri 6/6**
5	6/9-6/13	Introduction to multivariate functions: Active Calculus 9.1 Partial derivatives: Active Calculus 10.2 The Gradient Active Calculus 10.6 5.1 Approximating Areas: Calculus 5.1	**Quiz 3 Mon 6/9** **Exam 3 Wed 6/11** Withdrawal deadline 6/13
6	6/16-6/20	5.2 The Definite Integral: Calculus 5.2 5.3 The Fundamental Theorem of Calculus: Calculus 5.3 5.4 Integration Formulas and the Net Change Theorem: Calculus 5.4	**Project 4 Due Mon 6/16** **Quiz 4 Tues 6/17** **Final Exam Thurs 6/20**

Academic Support Resources

- **Library**: Students can access the Florida Polytechnic University Library through the University website and Canvas, on and off campus. Students may direct questions to library@floridapoly.edu.
- **Peer Learning Strategists (PLS)**: Are specially trained student leaders who help their peers strategize approaches to course content and work through solution methods. PLS work in collaboration with the courses they support so the content and methods are aligned with your instructors' expectations. Students can meet with a PLS in The Learning Center, which is located on the first floor of the Innovation, Science and Technology (IST) building in room 1019.
- **Academic Success Coaches**: All students at Florida Poly are assigned an Academic Success Coach. Your Academic Success Coach can assist you with academic success strategies. Please visit the Student Success Center on the second floor of the IST building to meet with an Academic Success Coach.
- **Writing Center:** Located on the second floor of the IST (2059/2061), the Writing Center helps students to develop their writing and presentation skills. Consultations are available in person and virtually. For more detail, visit **https://floridapoly.edu/writingcenter**.

Civility and Collegiality

Faculty and students come to the university for the same reason, which is to participate in a highly professional educational environment. To that end, both students and faculty are expected to treat each other with mutual regard and civility. In more general terms, collegiality means respecting the right of both faculty and students to participate fully and fairly in the educational enterprise.

University Policies

Reasonable Accommodations
The University is committed to ensuring equal access to all educational opportunities. The University, through the Office of Disability Services (ODS), facilitates reasonable accommodations for students with disabilities and documented eligibility. It is the student's responsibility to self-identify as a student with disabilities and register with ODS to request accommodations.

If you have already registered with ODS, please ensure that you have requested an accommodation letter for this course through the ODS student portal and communicate with your instructor about your approved accommodations as soon as possible. Arrangements for testing accommodations must be made in advance. Accommodations are not retroactive.
If you are not registered with ODS but believe you have a temporary health condition or permanent disability requiring an accommodation, please contact ODS as soon as possible.

The Office of Disability Services (ODS):
DisabilityServices@floridapoly.edu
(863) 874-8770
The Access Point
ODS website: www.floridapoly.edy/disability

Accommodations for Religious Observances, Practices and Beliefs
The University will reasonably accommodate the religious observances, practices, and beliefs of individuals in regard to admissions, class attendance, and the scheduling of examinations and work assignments. (See University Policy.)

Title IX
Florida Polytechnic University is committed to ensuring a safe, productive learning environment on our campus that prohibits sex discrimination and sexual misconduct, including sexual harassment, sexual assault, dating violence, domestic violence and stalking. Resources are available if you or someone you know needs assistance. You may speak to your professor, but your professors have an obligation to report the incident to the Title IX Coordinator. Please know, however, that your information will be kept private to the greatest extent possible. You will not be required to share your experience. If you want to speak to someone who is permitted to keep your disclosure confidential, please seek assistance from the Florida Polytechnic University Ombuds Office, BayCare's Student Assistance Program, 1-800-878-5470 and locally within the community at Peace River Center, 863-413-2707 (24-hour hotline) or 863-413-2708 to schedule an appointment. The Title IX Coordinator is available for any questions to discussion resources and options available.

Academic Integrity
The faculty and administration take academic integrity very seriously. Violations of academic integrity regulation include actions such as cheating, plagiarism, use of unauthorized resources (including but not limited to use of Artificial Intelligence tools), illegal use of intellectual property, and inappropriately aiding other students. Such actions undermine the central mission of the university and negatively impact the value of your Florida Poly degree. Suspected violations will be fully investigated, possibly resulting in an academic integrity hearing and sanctions against the accused student if found in violation. Sanctions range from receiving a zero on the exam or assignment, to expulsion from the university. Repeat offenders are subject to more severe sanctions and penalties.

Recording Lectures

Students may, without prior notice, record video or audio of a class lecture for a class in which the student is enrolled for their own personal educational use. Recordings may not be used as a substitute for class participation or class attendance. Recordings may not be published or shared in any way, either intentionally or accidently, without the written consent of the faculty member. Failure to adhere to these requirements is a violation of state law (subject to civil penalty) and the student code of conduct (subject to disciplinary action).

Recording class activities other than class lectures, including but not limited to lab sessions, student presentations (whether individually or part of a group), class discussion (except when incidental to and incorporated within a class lecture), and invited guest speakers is ***prohibited****.*