Math 11A: Calculus I with Applications

06/26/2021 - 08/27/2021

Instructor:	Amethyst Price	**Time:**	MWF 1:00 - 3:30 PM (PST)
Email:	amrprice@ucsc.edu	**Place:**	Zoom (Link on Canvas)

Office Hours: MWF 3:35 - 4:15 PM (PST)

Course Description: A modern course stressing conceptual understanding, relevance, and problem solving. The derivative of polynomial, exponential, and trigonometric functions of a single variable is developed and applied to a wide range of problems involving graphing, approximation, and optimization. Students cannot receive credit for both this course and MATH 19A or AM 11A or AM 15A, or ECON 11A.

Prerequisites: MATH 3 or AM 3; or mathematics placement (MP) score of 300 or higher; or AP Calculus AB exam score of 3 or higher.

Course Information Live lectures will be held and recorded on Zoom. Recordings are on Yuja (accessed through Canvas). We will use WebAssign for all homework. All exams and Quizzes will be on Canvas. All important updates and announcements will be sent via Canvas. Piazza will be used as our main contact forum outside of class and office hours.

Textbook: (Required) Biocalculus loose leaf with WebAssign by Stewart - ISBN: 9781305297814

WebAssign: All homework and exams will be given through WebAssign, an online platform separate from Canvas. WebAssign is also linked to your textbook (BioCalculus), published by CENGAGE. Please use the class key **(TBA..)** to enroll on WebAssign. Make sure to enter your student ID correctly.

Course Policies:

- You may attend lectures or watch the recordings via the Yuja tab on Canvas.
- WebAssign is **required** for all homework.
- Piazza will be used for all outside communication. Contributions to the learning of your peers will be duly noted and may result in a grade bump.
- There will be no curve.
- The standard grading scheme will be applied.
- Improvement and effort throughout the course will be duly noted and may result in a grade bump.
- If your pet joins us during lecture - please introduce them to the class.

Grade Distribution:

Quizzes	20%
WebAssign Homework	40%
Midterm	20%
Final	20%

Late Policy: Only **one** late homework (no questions asked) will be allowed. No quiz extensions will be granted. No make up exams will be given.

Quizzes: There will be 4 quizzes on Canvas, each worth 5% of your grade (20% in total). The quizzes will be closely related to lectures and they are designed to check your progress, and understanding of the material covered in the class. Once you start the Quiz on Canvas, you will have a set time limit to complete it.

Exams: The midterm and the final will be available on Canvas on Exam Days (listed below). They will be available for 24 hours. Once you start the Exam on Canvas, you will have a set time limit to complete it. More details found in Canvas on the **Exam Information Page**.

Extra Credit Surveys: There are 5 surveys each worth 1 point extra credit. If you complete the survey, you will automatically get the point. These surveys will focus on feedback regarding this course.

Piazza: We will use Piazza for all outside communication in this course. If you have a question regarding homework, concepts, logistics, or anything the whole class might benefit from - post it on Piazza. If you email me a question that I think falls under the above description - I will ask you to restate this question on Piazza. Answering questions for your peers is **highly encouraged**! I will not respond to questions immediately, to give you all a chance to reply. I will also not respond to questions after 8 pm (PST). Active participation in Piazza and contributing to the learning of your peers will be duly noted and may result in a grade bump at the end of the quarter.

Important Dates:

Drop Deadline (tuition reversed)	08/02
Midterm	08/11
Request "W" Deadline (no tuition reversed)	08/13
Final Exam	08/27

Important Summer Differences:

- You will **not** be dropped for non-attendance or non-payment. You must drop yourself.
- Dropping before the deadline results in a full-tuition reversal/refund.
- Withdraw posts a W for the grade and full tuition is charged (no refund).
- You cannot withdraw from a course in your portal, you must fill out the DocuSign form on the summer website.

For all other deadlines, here is the summer academic calendar: https://summer.ucsc.edu/studentlife/index.html
For questions regarding summer info, email summer@ucsc.edu.

Slug Support Program: College can be a challenging time for students and during times of stress, it is not always easy to find the help you need. Slug Support can give help with everything from basic needs (housing, food, or financial insecurity) to getting the technology you need during remote instruction. To get started with SLUG Support, please contact the Dean of Students Office at 831-459-4446 or you may send us an email at deanofstudents@ucsc.edu.

Slug Help/Technology The ITS Support Center is your single point of contact for all issues, problems, or questions related to technology services and computing at UC Santa Cruz. To get technological help, simply email help@ucsc.edu

DRC: UC Santa Cruz is committed to creating an academic environment that supports its diverse student body. If you are a student who requires accommodations to achieve equal access in this course, please submit your Accommodation Authorization Letter from the Disability Resource Center (DRC) via email, preferably within the first two weeks of the quarter. I encourage all students who may benefit from learning more about DRC services to contact DRC by phone at 831-459-2089 or by email at drc@ucsc.edu.

Title IX: The Title IX Office is committed to fostering a campus climate in which members of our community are protected from all forms of sex discrimination, including sexual harassment, sexual violence, and gender-based harassment and discrimination. Title IX is a neutral office committed to safety, fairness, trauma-informed practices, and due process.The Title IX Office is working remotely and is conducting meetings and interviews via zoom and phone. If you want to make a report or request a consult, you can expect the fastest response by using their online reporting link. For questions about making a report, your reporting responsibilities,and/or questions about the UC Policy on Sexual Violence and Sexual Harassment (https://policy.ucop.edu/doc/4000385/SVSH) call 831-459-2462.

Academic Honesty: Academic integrity is taken extremely seriously. You CANNOT search or post any of the assignments (quizzes, exams,homework) on any websites (including Chegg!). You CANNOT collaborate during midterm, final, and quizzes. For homework, you are encouraged to discuss problems together but make sure to complete your homework on your own. If any of these rules are not followed, you will receive 0 from that assignment and may be reported for a violation of academic integrity. The details of the policy can be found at https://www.ue.ucsc.edu/academic_misconduct.

Tentative Course Outline:

(*-sections may be added if time permits)

1. Functions and Sequences:
1.1 Four Ways to Represent a Function
1.2 A Catalog of Essential Functions
1.3 New Functions from Old Functions
1.4 Exponential Functions
1.5 Logarithms; Semilog and Log-Log Plots
1.6 Sequences and Difference Equations

2. Limits
2.1 Limits of Sequences
2.2 Limits of Functions at Infinity
2.3 Limits of Functions at Finite Numbers
2.4 Limits: Algebraic Methods
2.5 Continuity

3. Derivatives
3.1 Derivatives and Rates of Change
3.2 The Derivative as a Function
3.3 Basic Differentiation Formulas
3.4 The Product and Quotient Rules
3.5 The Chain Rule
3.6 Exponential Growth and Decay
3.7 Derivatives of the Logarithmic and Inverse Tangent Functions
3.8 Linear Approximation and Taylor Polynomials

4. Applications of Derivatives
4.1 Maximum and Minimum Values
4.2 How Derivatives Affect the Shape of a Graph
4.3 L'Hospital's Rule: Comparing Rates of Growth
4.4 Optimization Problems
4.5 Recursions: Equilibria and Stability
4.6 Antiderivatives