# Math 122: Overview of Calculus

**Class Webpage:**
connor-lehmacher.github.io/teaching/2023-math-122/coursepage.html
**Instructor:** Connor Lehmacher
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**TA:** Dylan Sosa
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**Class Time:** Monday through Friday, 9-11 am
**Classroom:** Psychology A, 146
**Office Hours:** Tuesdays and Thursdays, 6-8 pm
**Credits:** 3

**Course Description:** From the undergraduate bulletin: The basics of calculus in a self-contained, one-semester course. Properties and applications of polynomial, exponential, and logarithmic functions. Derivatives: slopes, rates of change, optimization, integrals, area, cumulative change, and average. The fundamental theorem of calculus. Emphasis on modeling examples from economics.
Note: This version of the class will have an emphasis on examples from physics instead of economics.

**Grading:** The relative significance of exams and homework in determining final grades is as follows:

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| Exercises | 20% |
| Problem Sets | 20% |
| Presentations | 10% |
| Project | 10 % |
| Midterm | 20% |
| Final Exam | 20% |

Letter grades are based on total class percentage, following the weight above. Final grades will be curved. Students who earn percentages in the following ranges will earn *at least* the listed letter grade:
A 95-100; A- 90-94; B+ 86-89; B 83-85; C+ 75-78; C 71-74; C- 67-70; D+ 62-66; D 58-61
If you want to see your current grades, please send me an email or talk to me before or after class.

**Textbook and Reference Materials:** There is no textbook for this class. Various reference materials are on the course website. I particularly recommend the 3blue1brown Essence of Calculus series. I will also post some of my notes.

**Exercises and Problem Sets:** This class has two types of homework. Exercise sets will be relatively simple practice of computations and problems we have

discussed in class. Problem sets will be more difficult. You will not be expected to solve all the problems on problem sets, and they will have generous amounts of bonus points. Both types of homework are to be turned in at the start of class on the day they are due. Due dates will be on the course website and the homeworks themselves. Under special circumstances homework will be accepted late or by email. Graded homework will generally be returned with feedback at the start of the next class. Students are encouraged to work together on problem sets. However, final submissions must be based on your own understanding and must be in your words. Per university policy, all instances of suspected academic dishonesty will be referred to the academic judiciary.

**Presentations and Project:** During class you will be expected to present solutions to problems or methods for calculating solutions. Some of these presentations will be graded for clarity of presentation and mathematical accuracy. There will also be a project due on the last day of class, August 1st. The projects can cover a variety of topics depending on your interests. For example, you could describe material we will not cover that appears on AP Calculus tests, you could discuss applications to science or economics, you could go deeper into the formal background behind calculus, or you could write up a solution to a long complex problem.

**Exams:** There will be a midterm on July 19st, and a final exam on August 1st. The final exam will be cumulative but will emphasize the second half of the material.

**Calculator Policy:** Graphing or scientific calculators are permitted on homeworks. See the course webpage for links to calculators. You can also use computer algebra systems (Symbolab, etc), here you may want to be careful because they are powerful enough to completely solve many exercises – so I would generally avoid using them. Calculators will not be permitted on exams.

**Schedule:** The schedule for the course is available on the course website. It will be filled out as the course progress depending on how much material we cover each class.

**Course Objectives and Student Learning Outcomes:** This a math class so the primary object is to learn the material in the course description. Additionally, I will emphasize learning problem solving, integrating your current knowledge of math together with the new material, and project based learning.

**Disability Support Services:** If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact the Student Accessibility Support Center, Stony Brook Union Suite 107, (631) 632-6748, or at sasc@stonybrook.edu. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential. Students who require assistance during emergency evacuation

are encouraged to discuss their needs with their professors and the Student Accessibility Support Center. For procedures and information go to the following website: https://ehs.stonybrook.edu//programs/fire-safety/emergency-evacuation/evacuation-guide-disabilities and search Fire Safety and Evacuation and Disabilities.

**Academic Integrity:** Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at http://www.stonybrook.edu/commcms/academic_integrity/index.html

**Critical Incident Management:** Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Student Conduct and Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.