

MAT 513: Analysis for Teachers I

Spring 2023

Department of Mathematics
Stony Brook University

Course Description: Topics in differential calculus, its foundations, and its applications. This course is designed for teachers and prospective teachers of advanced placement calculus. Mathematical topics integrate the study of the historical development of calculus, including contributions from diverse cultures.

Textbook:

- (Required) Understanding Analysis, 2nd edition, by Stephen Abbott.
- (Recommended) How to think about analysis, by Lara Alcock.

Prerequisites: MAT 511

Instructor: Dimitrios Ntalampekos. Email: dimitrios.ntalampekos@stonybrook.edu.
Office hours and Math Learning Center (MLC) hour:

<http://www.math.stonybrook.edu/cards/ntalampekodimitrios.html>

Grader: Yinzhe Gao. Email: Yinzhe.Gao@stonybrook.edu. Office hours and Math Learning Center (MLC) hour:

<https://www.math.stonybrook.edu/cards/gaoyinzhe.html>

Class Schedule: Monday and Wednesday at 4:25pm–5:45pm in Mathematics 4130.

Course Schedule: The course schedule for MAT 513 is posted in the following website and is **subject to changes**.

http://www.math.stonybrook.edu/~dimitriosnt/teaching/MAT513_spring2023/schedule_MAT513_spring2023.html

Grading Policy:

- Class Participation, Homework & Quizzes: 35%
- Midterm: 30%
- Final: 35%

Class Participation, Homework & Quizzes: Weekly **problem sets** will be assigned and collected in **Wednesday's lecture**. A significant part of doing mathematics is communicating mathematics. Homework is expected to be clear and grammatically correct, in addition to mathematically accurate. Homework not meeting this criteria may be returned ungraded. You are encouraged to discuss the homework problems with others, but your write-up must be your own work.

Announced and/or unannounced **quizzes** may be given, and there may be assignments completed and submitted during class, including **oral presentations**. Students are expected to be present for class, and missed quizzes or classwork may not be completed for credit.

- *Late homework will never be accepted*, but under documented extenuating circumstances the grade may be dropped.
- *Your lowest "Class Participation, Homework & Quizzes" grade will be dropped* at the end of the class.
- Each homework set and quiz carry equal weight in your final weighted grade.

Exams: There will be a Midterm and a Final Exam. By enrolling in this course, you are attesting to the fact that you will be available for the exams at the following times:

- The **Midterm** will be on Wednesday, March 8, during the time of the lecture.
- The **Final** will be on Tuesday, May 16, at 2:15-5:00pm.

Course Learning Objectives: This is a course in the foundational ideas of calculus and the real number system. Since the intended audience is in-service and pre-service secondary school (grades 6-12) teachers, we will attempt to make ties not only to ideas in calculus but also those arising in earlier grades. However, this is not a course on how to teach any specific school subject. Rather, the focus is on understanding the ideas that underlie them.

Basis of grade determination: A- and A 85-100%; B-, B, and B+ 65-85%; C and C+ 50-65%; D 40-50%; F 0-40% (percentages reflect weighted scores including assignments and exams). NOTE: These letter grades are threshold scores only. Actual final scores needed to earn a certain letter grade may be lowered if warranted based on the difficulty of the exams. In other words, if your final total points in the course equal a 85%, you will not earn less than an A-; however, the threshold for an A- may be lower.

Student Accessibility Support Center Statement (SASC)

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.