

# MAT127: Calculus-C

## Summer-II 2021

### Course Syllabus

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**Course Information:** MAT 127 (Calculus-C) is the third of the three courses sequence (MAT 125-127) on calculus. So, this course picks up after the students have learnt basic techniques and applications of differentiation and integration, and continues onto other essential topics in calculus like sequences, series, power series and differential equations, etc. The sequence MAT 125-127 covers similar material as the sequence MAT 131-132.

**Prerequisites:** Since this course is a continuation of MAT 126, a fluency in the basics of differential and integral calculus as covered in MAT 125 and 126 will be assumed throughout the course.

**Textbook:** The recommended textbook is “Calculus Volume 2” by Gilbert Strang and Edwin Herman which is accessible online via <https://openstax.org/details/books/calculus-volume-2>. This course will roughly cover Chapter 4, 5 and 6 of the book plus some material on second order linear ordinary differential equations.

**Course Plan and Schedule:** This course will meet online via zoom twice a week on Tuesdays and Thursdays 1:30-4:55pm starting on July 6 till August 12. The link to the zoom meetings will be made available via Blackboard. Note that each meeting is 3 hours and 25 hours long, which is much longer than the length of a meeting during the semester so as to cover a semester worth of material within 6 weeks. Consequently, much more material will be covered in a day than you are possibly accustomed to, so make sure you plan well on how you prepare for this course.

The tentative schedule for the course is as follows:

*Week 1:* Sequences, Series and their convergence; examples.

*Week 2:* Test of convergence of sequences and series; Power series.

*Week 3:* Taylor and MacLaurin Series; Midterm.

*Week 4:* Ordinary Differential Equations; Numerical Methods; Separable equations.

*Week 5:* Linear equation; Logistic Equation; Predator Prey system.

*Week 6:* Brief Introduction to Linear Second Order ODEs; Final exam.

**Grading:** The grading of this course will be based on weekly quizzes (20%), homeworks (20%), midterm exam (30%) and final exam (30%).

**Quizzes:** Except the first week, there will be weekly quizzes held in the beginning of each session on Tuesday. The quiz will be composed of multiple choice questions based on the material covered in the previous week and will take roughly 20 minutes. *Calculators will not be necessary and also won't be allowed during the quizzes.*

**Homework:** Each week, there will be homework assigned via Lumen OHM.

**Exams:** There will be two exams: the midterm exam on Thursday July 22 and the final exam on Thursday August 12. The midterm exam will be based on the material covered till August 10 (that is, Chapter 5 and 6 of the book), whereas the final exam will be based on the entire course, though greater emphasis will be placed on the material covered after the midterm exam. *Calculators will not be allowed during either of the exams.* During the exams, the students are supposed to join the zoom meeting with their video on and without any virtual background.

Unlike the quizzes, the midterm and final exams will comprise of short answer question for which you will be expected to provide a detailed solution, and not just the final answers.

## **Required Syllabus Statements**

### **Student Accessibility Support Center Statement**

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](mailto: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 Statement**

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](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.