



Stony Brook University

MAT303 – Calculus IV with Applications

Syllabus - Spring 2026

Part 1: Course Overview

Course Information

Lecturer: Deb Krieg	debra.krieg@stonybrook.edu	Contact Card
REC 01: Dashen Yan	dashen.yan@stonybrook.edu	Contact Card
REC 02: Chrysa Georgousaki	chrysoula.georgousaki@stonybrook.edu	Contact Card
REC 03: Chrysa Georgousaki	chrysoula.georgousaki@stonybrook.edu	Contact Card
REC 04: Dashen Yan	dashen.yan@stonybrook.edu	Contact Card

Click contact card to find our office hours/location.

Course Description: Homogeneous and inhomogeneous linear differential equations; systems of linear differential equations; series solutions; Laplace transforms; Fourier series. Applications to economics, engineering, and all sciences with emphasis on numerical and graphical solutions; use of computers. May not be taken for credit in addition to AMS 361, MAT 305, or MAT 308.

Course Delivery Mode: Lectures are held in-person; attendance is strongly encouraged, but not mandatory. Lectures are not recorded; lecture notes are posted within 24 hours of class.

General education designation(s) (SBC): STEM+

Credit hours: 4

Prerequisites: C or higher in MAT 127 or 132 or 142 or AMS 161 or level 9 on the mathematics placement examination.

Required Course Textbooks and Materials

Textbook

Differential Equations and Boundary Value Problems by Edwards/Penney/Calvis, Fifth Edition.

Text is available through Pearson via rental, purchase, or digital: ISBN for [looseleaf](#): 9780134873039; ISBN for [e-text](#): 9780137442782. The looseleaf version is also on [Amazon](#) although you'll need to be careful to get the correct edition especially if you're buying a used copy. There is also a Kindle version. You will NOT need the book during lecture, in case that's a factor in your decision-making.

Note: MyLab will NOT be utilized this semester

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Calculator

You will NOT be permitted to use a calculator for either homework or exams.

Brightspace

You are expected to check Brightspace (brightspace.stonybrook.edu) regularly throughout the course to access course material, read announcements and view grades. Make sure your notifications are properly set so you receive information in a timely manner (more info below).

Gradescope

You are expected to use [Gradescope](#) to upload your completed paper homework each week and you'll access your graded exams through this program. Look for an email invitation to create a login on your **Stony Brook** email account at the end of Week 2 of the semester. *There is no cost to access Gradescope.* More information on how to use Gradescope will be provided on Brightspace.

How We Will Communicate

Regular, professional, and respectful communication is essential. Check Brightspace regularly for newly posted material.

- Set Brightspace notifications to be alerted via email of updates.
- Email responses are generally sent within 6 hours although replies to emails sent outside of the normal business day may take 12-48 hours.
- Your Stony Brook University email must be used for all University-related communications. *Include course name and section in subject.*
- All instructor correspondence will be sent to your SB email account.

How to Succeed in this Course

Expect to spend 2-5 hours/week on average for homework and exam preparation.

- Attend each lecture and recitation
- Check Brightspace and your SBU email regularly
- Keep track of all due dates and plan ahead!
- Complete all graded assignments on time
- Work through problems until you can complete without external resources
- Complete review material in advance of review sessions

We are happy to answer questions you have about the material or to discuss any concerns that you have about the course. If you are struggling to understand a topic, it will be more productive to ask for clarification *before* looking at external sites.

Besides recitation, you can also get homework help from the [Math Learning Center](#). This is a free service.

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Part 2: Grading, Attendance and Late Work Policies

Assessment and Grading

Letter Grades:

Course grades are determined based on the breakdown of the class's weighted average (see weights below) and your mastery of the material. There are no predetermined cutoffs for course grades – see below for *minimum* threshold cutoffs. A cutoff may be lowered to adjust for exam difficulty.

Minimum Thresholds:

A 93-100, A- 90-92, B+ 87-89, B 83-86, B- 80-82, C+ 77-79, C 73-76, C- 70-72, D+ 67-69, D 63-66, F 0-62

Individual exams are not assigned letter grades, but statistics will be posted so you know how you did compared to others in the course.

Extra credit opportunities are **NOT** an option to compensate for low exam scores; NO extra credit will be given on an individual basis.

Weights:

Activity/Assignment	Percentage	Due Date
Paper Homework	20%	Fridays 11:59pm*
Exam #1	25%	exam dates are posted on schedule and in Brightspace calendar
Exam #2	25%	
Final Exam	30%	
Total	100%	

* exceptions may occur

Exam Format:

Midterms are taken during lecture. The final exam is held during final examination week. Final exam location will be announced later in the semester. See Part 4 of the syllabus if you require [accommodations](#).

Exams are closed book, handwritten, and short answer. Partial credit given where appropriate. You may NOT use a calculator during exams. Full work must be shown to receive full credit – little to no credit is given for a correct answer without proper substantiation. In addition to computational and application problems, be prepared to explain a concept in 1-2 sentences.

Make-up exams will not be given under any circumstances. See below for more information on makeup policy.

See [Undergraduate Grading System](#) for additional information regarding GPNC, Withdrawal Policies, Incompletes

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Homework

Homework will be assigned weekly via Gradescope (see above). Paper homework must be completed using the provided form then uploaded to Gradescope. Submissions are NOT accepted via email or in-person. Each homework assignment must be submitted by Friday 11:59pm ET – see makeup policy below.

Makeup Policy

Paper homework will not be accepted late under ANY circumstances. At the end of the semester, the two (2) lowest scores will automatically be dropped to offset the occasional unforeseen circumstances.

Considering missing an exam?

Exams are NOT offered at an alternate time. If you encounter a documentable unforeseeable and unpreventable circumstance, contact me (your lecturer) **prior to** the exam start time, providing proper documentation. Missing a midterm is NOT recommended unless it's absolutely necessary as it puts an extra weight on the final exam for your course letter grade (see below). I'll discuss your situation with you and advise you in the moment. Missing an exam without having made other arrangements will result in a grade of zero for the exam.

If a midterm is missed, at the end of the semester, your final exam score will serve as the missed midterm score. If the absence is not excused, your score will be zero.

If the final exam is missed, an Incomplete MAY be given as the course grade at my discretion and you must make arrangements with me to take the final. Again, discuss it with me before the exam so I can best advise you. [see *Course Policies* below for more info on [taking an Incomplete](#).]

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Part 3: Course Schedule (tentative)

The schedule below contains a tentative pace for topics that will be covered in the course as well as exam dates and University deadlines. Unforeseen events may cause changes to the schedule. The most up-to-date schedule is posted on Brightspace in the General Info module.

	<u>Topics</u>	<u>Sections</u>	<u>University Deadlines</u>
26-Jan			
1	Review - Select Topics Separable Solutions	Ch 1 1.4	
2-Feb			
2	Linear 1st Order Equations Substitution Models	1.5 1.6	6-Feb 4pm: last day to add/drop, swap sections 6-Feb 4pm: last day withdraw w/o "W"
9-Feb			
3	Population Models, Logistics Eqns Equilibrium Solutions, Stability Acceleration-Velocity Models	2.1 2.2 2.3	
16-Feb			
4	Euler's Method 2nd Order Equations General Solutions	2.4 3.1 3.2	
23-Feb			
5	n-th Order Eqns w Constant Coeff Mechanical Vibrations end of Exam 1 material	3.3 3.4	
2-Mar			
6	Review MON Exam 1 - WED during class		
9-Mar			
7	Non-Homogeneous Eqns Forced Oscillations Endpoint Problems and Eigenvalues	3.5 3.6 3.8	
16-Mar			
8	Spring Break no classes		
23-Mar			
9	1st Order Systems Elimination Method	4.1 4.2	
30-Mar			
10	Matrices and Linear Systems Eigenvalue Method for Homogeneous Sys	5.1 5.2	3-Apr 4pm: last day GPNC/withdraw
6-Apr			
11	Repeated Eigenvalues end of Exam 1 material	5.5	
13-Apr			
12	Review MON Exam 2 - WED during class		
20-Apr			
13	Matrix Exponentials Laplace Transform	5.6 7.1	
27-Apr			
14	Transformation of IVP Partial Fraction Decomposition	7.2 7.3	
4-May			
15	Final Review		11-May: Reading Day Final Exam (room TBA): 13-May 11:15am - 1:45pm

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Part 4: University and Course Policies

University Policies

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. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

Once approved, **you must schedule to take each exam with SASC proctors.**

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 Professions, 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

Note: when it appears that collaboration between students has occurred, **both** students will be reported - make every attempt to keep your own work out of view of others.

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.

Course Policies

Understand When You May Drop This Course:

If you are considering dropping, withdrawing from, or GPNCing the course, it is your responsibility to be aware of the tuition liability deadlines listed on the registrar's [Academic Calendar](#). Before making the decision to drop/GPNC, you may want to contact me and/or refer to the University's policies: [Undergraduate Course Load and Course Withdrawal Policy](#)

Attendance Policy:

You are expected to attend every lecture and recitation plus report for examinations as well as submit major graded coursework as scheduled. If you are unable to attend class(es), report for any exams or complete major graded coursework as scheduled due to extenuating circumstances, contact me as soon as possible. You may be requested to provide documentation to support their absence and/or may be referred to the Student Support Team for assistance.

Incomplete Policy:

Under emergency/special circumstances, students may petition for an incomplete grade. Circumstances must be documented and significant enough to merit an incomplete. If you need to request an incomplete for this course, contact me for approval as far in advance as possible. You should also read the University's policies that apply to you:

[Undergraduate Bulletin](#)

Course Materials and Copyright Statement:

Course material accessed from Brightspace, Zoom, Echo 360, VoiceThread, etc. is for the exclusive use of students who are currently enrolled in the course. Content from these systems cannot be reused or distributed without written permission of the instructor and/or the copyright holder. Duplication of materials protected by copyright, without permission of the copyright holder is a violation of the Federal copyright law, as well as a violation of Stony Brook's Academic Integrity.