Stony Brook University **Calculus B**
Mathematics Department **MAT 126**
Thomas Rico (Course Coordinator) **Fall 2023**

Syllabus

Course Description: A continuation of MAT 125, covering integral calculus: the fundamental theorem, symbolic and numeric methods of integration, area under a curve, volume, applications such as work and probability, and complex numbers. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Dec: C **SBC:** QPS **Credits:** 3

Prerequisite: C or higher in MAT 125 or 131 or 141 or AMS 151 or level 6 on the mathematics placement examination.

Grading Scheme:

20%: Test 1 (Wednesday 10/4 from 8:30 PM to 9:50 PM)

20%: Test 2 (Thursday 11/9 from 8:30 PM to 9:50 PM)

35%: Cumulative Final Exam (Wednesday 12/13 from 2:15 PM to 5:00 PM)

15%: Quiz Average

10%: Homework

Grading Scale: A 90-100, A- 85-89, B+ 80-84, B 75-79, B- 70-74, C+ 65-69, C 60-64, C- 55-59, D+ 50-54, D 40-49, F 0-39

*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 overall course percentage at the end of the course is 86%, you will not earn less than an A-; however, the threshold for a A- may be lower. Do not falsely conflate "difficulty of exams" with "low exam averages" to mean the same thing.

There will be no extensions for (or exemptions from) any HW, Quiz, or Exam unless your absence is based on a well-documented extenuating circumstance. There will be no extra credit given to any student on an individual basis.

Academic Calendar: All Registrar deadlines can be found here.

Brightspace: This will be our main resource for sharing information regarding grades, announcements, and course materials so please check it regularly.

WebAssign Homework: A WebAssign subscription is required to complete your HW in this course. The link to join WebAssign can be found on Brightspace. Unless otherwise stated, you will receive an assignment posted every Sunday morning on WebAssign. It is strongly advised that you work through these assignments every week, but they will be due in 3 batches (see weekly schedule).

Quizzes: Unless otherwise stated, there will be a short one question quiz given at the end of every recitation. The quiz question will be a problem from the previous week's WebAssign, which is why you are encouraged to keep up with the WebAssign problems as they are posted. At the end of the semester, the lowest quiz will be dropped.

Calculators: Will not be permitted during any quiz or test. It is also strongly encouraged that you stay away from them while you work through your homework.

Textbook: *Calculus: Concepts and Contexts,* 5^{th} edition by James Stewart. This text is used throughout the MAT 125/126/127 sequence as well as MAT 131/132, but not AMS 151/161. Your WebAssign subscription includes an electronic copy of the textbook. Please note that the purchase of a physical copy of the textbook is not required.

Meeting Times: A complete table of meeting times can be found by clicking here.

Contact Info/Office Hours: You can find the office hours and contact info for your professors and TAs by clicking here.

Tutoring and Self-Study Resources

Math Learning Center (MLC): Is a place where you can get free tutoring help with any of your math concerns. No appointment is required, just come in and ask for help. The MLC is located in the basement of the Mathematics Tower and virtually through Zoom. For more information, visit: http://www.math.stonybrook.edu/mlc/center-hours.html

Math Department Course Video Archive: Here you can find recordings of topics taught from previous semesters. This resource is not a viable substitute for attending class. Topics may be ordered differently than how they are ordered in your current class. You can find the video archive by clicking here.

Academic Success and Tutoring Center (ASTC): Free academic support services including one-on-one and small group course-based tutoring, one-on-one skill-based tutoring, peer assisted learning (Supplemental Instruction), and other academic success services are available for undergraduate students. Learn more about these services by visiting http://www.stonybrook.edu/tutoring.

Standard University Syllabi Statements

Student Accessibility Support Center (SASC) 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.

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

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.

Anticipated Weekly Schedule

Week 1 (8/28 - 9/1)

- 5.1: Areas and Distances
- Sigma Notation

Week 2 (9/4 - 9/8): No classes Monday 9/4 (Labor Day)

- 5.2: The Definite Integral

Week 3 (9/11 - 9/15)

- 5.3: Evaluating Definite Integrals
- 4.8: Review of Antiderivatives

Week 4 (9/18 - 9/22)

- 5.4: The Fundamental Theorem of Calculus
- 5.5: The Substitution Rule

Week 5 (9/25 - 9/29)

- 5.6: Integration by Parts
- Review/Catch up

Week 6/Exam Week (10/2 - 10/6)

- First batch of HW due on WebAssign by 11:59pm on Tuesday 10/3
- Test 1: Wednesday 10/4 covering topics from Weeks 1-5
- 5.7: Additional Techniques of Integration

Week 7 (10/9 - 10/13): No classes Monday 10/9 and Tuesday 10/10 (Fall Break)

- 5.7: Additional Techniques of Integration (Continued)
- 5.10 Improper Integrals

Week 8 (10/16 - 10/20)

- 5.10 Improper Integrals
- 6.1: More about Areas

Week 9 (10/23 - 10/27)

- 6.5: Average Value of a Function
- 6.8: Probability

Week 10 (10/30 - 11/3)

- 6.6: Applications to Physics (Work)
- Review/Catch up

Week 11/Exam Week (11/6 - 11/10)

- Second batch of HW due on WebAssign by 11:59pm on Wednesday 11/8
- Test 2: Thursday 11/9 covering topics from Weeks 6-10
- 6.2: Volumes
- 6.3: Volumes by Cylindrical Shells

Week 12 (11/13 - 11/17)

- Volumes Continued
- 6.4: Arc Length

Week 13 (11/20 - 11/24): No classes Wednesday 11/22 - Friday 11/24 (Thanksgiving)

- Surface Area
- 1.6: Parametric Curves

Week 14 (11/27 - 12/1)

- Curves in Polar Coordinates
- Areas and Lengths in Polar Coordinates

Week 15 (12/4 - 12/8)

- Complex Numbers
- Review/Catch up

Week 16/Finals Week (12/11 - 12/15)

- Last Monday class on 12/11 (Review)
- Third batch of HW due on WebAssign by 11:59pm on Tuesday 12/12
- Cumulative Final Exam on Wednesday 12/13 from 2:15 PM to 5:00 PM