Bridgewater State University

MATH 162: Single Variable Calculus (Calculus II)

Summer 2023 Syllabus

Time: Monday-Friday	**Instructor: TBA**
Office: TBA	**Office Hours: TBA (Or by appointment)**
Phone: TBA	**E-mail: TBA**
Semester: May 29, 2023 – June 23, 2023	**4 Credits**

Course Catalog Description
This course is a continuation of material found in Math 161. Topics will include integration techniques and applications of integration using algebraic and transcendental functions. In addition, sequences and series will be discussed. Offered fall, spring, summer. (CMAR)

Prerequisite
Calculus I Math 161/161E with a minimum grade of "C-" or consent of department.

Textbook
Calculus – Early Transcendentals (with WebAssign), 8th edition, by James Stewart.
Students must purchase access to WebAssign, but a hard copy of the text is **optional**. Access to WebAssign includes access to an electronic version of the textbook.

Topic Calendar
We will cover most of the material from the following chapters of the course text (Chapter 6 – Chapter 11).

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No.	Sections Covered (Tentative)
	Week 1
1	Review of Calculus I
2	5.5 Substitution Method
3	6.1 Area Between Two Curves
4	6.2 Volumes
5	6.3 Volumes by Cylindrical Shells
6	7.1 Integration by Parts
7	7.2 Trigonometric Integrals
8	7.3 Trigonometric Substitution
9	7.4 Integration of Rational Functions by Partial Fractions
10	7.5 Strategy for Integration
	Week 2
11	7.8 Improper Integrals
12	8.1 Arc Length
13	8.2 Area of a Surface of Revolution
14	9.1 Modeling with Differential Equations
15	9.2 Direction Fields and Euler's Method
16	9.3 Separable Equations
17	9.4 Models for Population Growth
18	9.5 Linear Equations & Midterm Exam Review
	Week 3
20	10.1 Curves Defined by Parametric Equations

21	10.2 Calculus with Parametric Curves
22	10.3 Polar Coordinates
23	10.4 Areas and Lengths in Polar Coordinates
24	11.1 Sequences
25	11.2 Series
	Week 4
26	11.3 The integral Test and Estimates of Sums
27	11.4 The Comparison Tests
28	11.5 Alternating Series
29	11.6 Absolute Convergence and the Ratio and Root Test
30	11.7 Strategy for Testing Series & Final Exam Review

Course Outcomes

By the end of this course, you will be expected to:

- Correctly evaluate indefinite, definite and improper integrals using various integration formulas and techniques covered in class
- Understand the connection between integrals and area, and find the area of a region between curves
- Use integrals to find the volume of a solid of revolution
- Determine convergence or divergence of sequences
- Understand the relationship between sequences and infinite series
- Determine convergence or divergence of infinite series using various tests (Divergence Test, Geometric Series Test, p-Series Test, Integral Test, Comparison Test, Limit Comparison Test, Alternating Series Test, Ratio Test, and Root Test)
- Determine the interval of convergence of a power series,
- Find a Taylor or MacLaurin series for a function, and
- Communicate mathematics effectively by using the correct terminology and notation.

Homework
Homework problems are online, we will use the online resource WebAssign for weekly homework assignments and supplemental materials. Make sure to select the correct course, please refer to Achieve Instruction on the blackboard for more details. NO LATE HOMEWORK WILL BE ACCEPTED.

Attendance
Attendance for the course will be the Watch It/Lecture videos with questions on WebAssign. For each section, videos with questions are available on WebAssign. Please complete the Watch It/Lecture videos to receive the full attendance credits.

Blackboard
Grades and additional course content will be uploaded to Blackboard. Make sure to check it regularly for updates.

Midterm Exam
You will take 1 mid-term exam on Blackboard during the semester. Exam is given online, time will be limited to class time (75 minutes). The exam will involve a mix of mechanical skills and conceptual reasoning. The best possible preparation for them is regular attendance and completion of assigned homework. Make-up exams are only given in case of documented emergencies.

Final Exam
The final exam will also take place as the midterm exam.

Points Allocation
Your final course grade will be determined by
Homework: 30%
Attendance: 20%
Midterm Exam: 20%
Final Exam: 30%

Letter grades will be assigned as follows:

A	93-100	C	73-76
A-	90-92	C-	70-72
B+	87-89	D+	67-69

B	83-86	D	63-66
B-	80-82	D-	60-62
C+	77-79	F	below 60

THE ACADEMIC ACHIEVEMENT C ENTER (AAC) provides students with academic services and resources that propel them toward successful and timely degree completion. With all services available online for the fall, the AAC is the largest hub of student academic services on campus. The AAC is comprised of four major support areas: Academic Advising (first-semester freshmen), Disability Resources and Student Accessibility Services, Learning Assistance (Academic Coaching and Tutoring), and Testing Services.

Learning Assistance (LA) consists of both Academic Coaching and Tutoring. Tutoring areas include: Math Services, the Accounting & Finance Lab, Writing Studio, Tutoring Central (100/200 introductory and Core Curriculum courses), and Second Language Services. All LA services for the fall 2020 semester are being offered online. To use the virtual drop-in tutoring or to make an appointment for Tutoring or Academic Coaching, please sign into our platform, Accudemia, using your BSU credentials, or bookmark the link: https://bridgew.accudemia.net.

Academic Conduct

The academic integrity policy of Bridgewater State University will be strictly enforced. This policy can be found in the BSU Student Handbook. Specifically, the policy requires that students do not cheat, fabricate, plagiarize, or facilitate academic dishonesty. Students who passively engage in cheating (i.e. allowing others to cheat off them) may receive the same consequences as the person copying. Violations will be handled in accordance with BSU's academic integrity policy.

Student Accessibility Services

Bridgewater State University is committed to providing equal access to students with documented disabilities. If you have a disability that may impact your experience in this class and for which you may require accommodations, please see the Student Accessibility Services (SAS) office so that such accommodations can be considered. The SAS can be reached at SAS@bridgew.edu or 508.531.2194. If you are granted accommodations, please meet with me confidentially to review how they will be applied in this course.

* This syllabus may be amended during the semester.