



## Bridgewater State University

### MATH 162: Single Variable Calculus ( Calculus II )

#### Summer 2023 Syllabus

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

#### Course Catalog Description

Topics will include integration techniques and applications of integration using algebraic and transcendental functions. In addition, sequences and series will be discussed.

#### Prerequisite

Calculus I with a minimum grade of "C-" or consent of department.

#### Textbook

Calculus – Early Transcendentals, 3<sup>rd</sup> edition, by James Stewart

#### Topic Calendar

No.	Sections Covered (Tentative)	Day
	Week 1	
1	Review of Calculus I	1
2	5.5 Substitution Method	1



3	6.1 Area Between Two Curves	1
4	6.2 Volumes	1
5	6.3 Volumes by Cylindrical Shells & Exam 1 Review	1.5
	Week 2	
6	7.1 Integration by Parts	1
7	7.2 Trigonometric Integrals	0.5
8	7.3 Trigonometric Substitution	0.5
9	7.4 Integration of Rational Functions by Partial Fractions	1
10	7.5 Strategy for Integration	0.5
11	7.8 Improper Integrals	1.5
	Week 3	
12	11.1 Sequences	0.5
13	11.2 Series	0.5
14	11.3 The integral Test and Estimates of Sums & Exam 2 Review	1
15	11.4 The Comparison Tests	0.5
16	11.5 Alternating Series	0.5
17	11.6 Absolute Convergence and the Ratio and Root Test	1
18	11.7 Strategy for Testing Series	0.5
	Week 4	
19	11.8 Power Series	1.5
20	11.9 Representations of Functions as Power Series & Exam 3 Review	1
21	11.10 Taylor and Maclaurin Series	1.5
22	11.11 Applications of Taylor Polynomials & Final Exam Review	1



## 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

Students are expected to read relevant sections of the textbook prior to attending class. Written homework will be graded. Students may work together on homework, but each individual student is required to submit their own work. Homework will be collected in class at the beginning of the class period, due dates will be given in class, and are on posted on Blackboard. NO LATE HOMEWORK WILL BE ACCEPTED.

## Blackboard

Grades and additional course content will be uploaded to [Blackboard](#). Make sure to check it regularly for updates.

## Quizzes (Attendance)

Quizzes/Attendance will be given in class. Often you will be able to work in groups, but each individual student must submit his or her own work. **There will not be any make-up quizzes available.**

## Important Notes about Submitted Work

On all of your written assignments you must show all work for the problems to receive full credit, even if the final answer is correct. Do not submit just the final answer not supported by any work. Your handwriting must be legible, your name and class time must be clearly written



at the top of the front page. Proper notation is mandated.

### **Midterm Exams**

You will take 3 midterm exams during the winter semester. Exams are given in class, time will be limited to class time. Each will involve a mix of mechanical skills and conceptual reasoning. The best possible preparation for them is regular attendance and completion of assigned homework & quizzes. You may have 1 page 8x11 of hand written notes (1 side only) on each exam, including a final exam, specific problems solved may be included. Make-up exams are only given in case of documented emergencies.

### **Final Exam**

The final exam will take place on TBD.

### **Grading**

Your final course grade will be determined by

Homework:	20%
Quizzes (Attendance):	10%
Midterms:	Each 15%
Final Exam:	25%

### **Grading Scale:**

A 90-100% B 80-89.9% C 70-79.9% D 60-69.9% F 0-59.9%

### **Extra credit:**

If you come to class and do the homework, your grade will take care of itself. Any opportunity for extra credit will be offered to the class as a whole, usually as part of a test or exam. No individual requests for extra credit projects will be considered.

### **Academic conduct**

Students are encouraged to discuss the course material with one another and form study groups to prepare for the quizzes and exams. However, collaboration on individual assignments (homework, quizzes, and exams) is not allowed and will be handled in accordance with BSU's [academic integrity policy](#).

\* This syllabus may be amended during the semester.