

Calculus II
Fall 2019

MATH 211.01 (4 credits), MTu_ThF, 08:00A-08:50A, Wickersham 112

Prerequisites: A grade of C- or better in MATH 161 or MATH 163H (*Calculus I*) is the prerequisite for this course.

Instructor: Dr. Buchanan

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Office Hours: 10:00A-10:50A (M-F), 10:00A-10:45A (Tu_Th), 02:00-02:50P (W), or by appointment

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Textbook: *Calculus Volume 2*, G. Strang, E. Herman, *et al.*, OpenStax, Houston, (2017), ISBN: 978-1-938168-06-2 (print book) 978-1-947172-14-2 (PDF version).

This is an open source textbook available from [OpenStax](https://openstax.org). Students may download a [portable document format](#) (PDF) version of the text, view the text [online](#), or (if a student prefers) order a [print copy](#). The text can be read on portable tablets, smart phones, laptops, and desktop computers.

Objectives: MATH 211 is a continuation and extension of the topics and concepts introduced in MATH 161 *Calculus I*. Major emphasis is on the transcendental functions, techniques of integration, sequences and series, and parametric equations. The student will:

- Apply the definite integral to finding plane areas, volumes and surface areas of solids, and lengths of curves, and to selected problems in physics.
- Learn standard techniques of integration: Integration by parts, integration of powers of trigonometric functions, trigonometric substitution, partial fractions, and selected special substitutions.
- Evaluate improper integrals of both kinds, and use l'Hôpital's rule.
- Learn about sequences and infinite series, and apply the standard tests for convergence of series (to numerical series, and to power series).
- Construct Taylor and Maclaurin series for functions, and apply them in calculations.
- Graph curves in polar coordinates, recognize standard forms in polar coordinates, and find areas in polar coordinates by integration.
- Describe curves in parametric form, and apply the techniques of calculus to parametric curves.

Course Contents: Topics covered this semester will include:

- Applications of the definite integral,
- Exponentials, logarithms and other Transcendental functions,
- Integration Techniques,
- Infinite series,
- Parametric equations and polar coordinates.

If time permits other topics may be covered as well.

Attendance: Students are expected to attend all class meetings per the [University Approved Guidelines](#). If you cannot regularly attend class due to a time conflict with another class or activity, you should change to a different section of this course or wait until a later semester to take this course. You may not remain on the class roster but attend a different section of this course merely for the convenience of your schedule. If you must be absent from class you are expected to complete class requirements (*e.g.* homework assignments) prior to the absence. If you know you will be absent on the day of a test, you must notify me **before** the time the test is scheduled in order to receive permission to take a make-up test. Students who miss a test should provide a valid excuse, otherwise you will not be allowed to make up the test. No final exam exemptions.

Homework: Students are expected to do their homework and participate in class. Students should expect to spend a minimum of three hours outside of class on homework and review for every hour spent in class. Homework exercises help students review and reinforce concepts covered in class. The textbook exercises are arranged in generally increasing level of difficulty. Working only the low-numbered exercises will not prepare a student sufficiently for the test and final examination exercises. In addition to the exercises assigned in the textbook, graded assignments will be distributed on paper handouts at the completion of nearly every section of the textbook. Each assignment will have a due date. Homework can be accepted for grading without penalty until the assignment has been graded and returned to the students or the solutions have been posted under D2L. After an assignment has been graded and returned to the students or the solutions have been posted under D2L, it can no longer be submitted for grading. All assigned homework exercises must be worked until successful completion. You should work, and if necessary re-work, the exercises until you achieve at least an 80% proficiency on the exercises.

Tests: There will be four 50-minute in-class tests and a comprehensive final examination. The tests are tentatively scheduled for

- Tuesday, September 17, 2019,
- Friday, October 11, 2019,
- Tuesday, November 5, 2019,

- Tuesday, December 3, 2019.

Missed tests must be made up as soon as possible, preferably within one week of the originally scheduled test date.

The final examination is scheduled for Thursday, December 12, 2019, from 02:45P-04:45P. I will not “curve” test or exam grades.

Grades: Course grade will be calculated as follows.

Test Average	50%
Homework	30%
Final Examination	20%

Tests and the final examination will be graded individually on a 100-point scale. If a student believes that an error was made in the grading of a test, the student should explain *in writing* why they believe an error exists and submit the graded material and the explanation of the possible error to me within 3 class periods of the graded test or homework being returned to the student. In no cases will adjustments to grades of less than 3 points be made. I keep a record of students’ test and exam scores. Students should also keep a record of graded assignments, tests, and other materials. As an example of the calculation of the numerical course grade, suppose a student’s three test grades were 78, 65, 70, and 71 (out of a maximum of 100 points on each test), the student’s final examination grade was 71 (again, out of a maximum of 100), and that ten graded homework assignments were given during the semester with grades of {2, 8, 0, 1, 7, 3, 6, 3, 9, 7}. This hypothetical student’s numerical course grade would be calculated according to the formula

$$\left[\frac{78 + 65 + 70 + 71}{4} \cdot 0.50 \right] + [71 \cdot 0.20] + \left[\frac{2 + 8 + 0 + 1 + 7 + 3 + 6 + 3 + 9 + 7}{10} \cdot 3.0 \right]$$

$$= 35.5 + 14.2 + 13.8$$

$$= 63.5.$$

The course letter grades will be calculated as follows. I will not “curve” course grades.

90-92	A-	93-100	A	
80-82	B-	83-86	B	87-89 B+
70-72	C-	73-76	C	77-79 C+
60-62	D-	63-66	D	67-69 D+
		0-59	F	

Course Repeat Policy: An undergraduate student may not take an undergraduate course of record more than [three times](#). A course of record is defined as a course in which a student receives a grade of A, B, C, D, (including + and -) F, U, Z or W. The

academic department offering a course may drop a student from a course if the student attempts to take a course more than three times.¹

The last day to withdraw from a course (receiving the W grade) is Friday November 1, 2019.

Inclement Weather Policy: If we should miss a class day due to a school [delay](#) or [cancellation](#), any activities planned for that missed day will take place the next time the class meets. For example, if a test is scheduled for a day that class is canceled on account of snow, the test will be given the next time the class meets.

Cell Phones: Silence (or better yet, turn off) all cellular telephones upon entering the classroom. Leaving class to initiate or receive a telephone call will not be tolerated and students doing so will not be re-admitted to the classroom until the following class meeting. Texting or tweeting during class interferes with the learning process. Students distracted by their cell phones are not engaged in class and will find, over the course of the semester, that learning and course grade will suffer.

Title IX Reporting Responsibilities: Millersville University and its faculty are committed to assuring a safe and productive educational environment for all students. In order to meet this commitment and to comply with Title IX of the Education Amendments of 1972, 20 U.S.C. §1681, *et seq.*, and act in accordance with guidance from the Office for Civil Rights, the University requires faculty members to report to the University's Title IX Coordinator incidents of sexual violence shared by students. The only exceptions to the faculty member's reporting obligation are when incidents of sexual violence are communicated by a student during a classroom discussion, in a writing assignment for a class, or as part of a University-approved research project. Faculty members are obligated to report to the person designated in the University Protection of Minors policy incidents of sexual violence or any other abuse of a student who was, or is, a child (a person under 18 years of age) when the abuse allegedly occurred.

Information regarding the reporting of sexual violence, and the resources that are available to victims of sexual violence, is available at <https://www.millersville.edu/titleix/index.php>.

Final Word: Math is not a spectator sport. What you learn from this course and your final grade depend mainly on the amount of work you put forth. Daily contact with the material through homework assignments and review of notes taken during lectures is extremely important.

No one can guarantee you success in this course. Your responsibilities and the instructor's expectation are outlined above. There will be no second chances or "do-overs".

¹Memorandum to mathematics faculty from Dr. Charles G. Denlinger, Assistant Chair, Department of Mathematics, August 30, 2004.