

Loyola University Maryland
Department of Mathematics and Statistics
MATH 252 (Calculus II)

Sec. 01: MWF 11:00AM-11:50AM, KH 005 and (TU) 12:15PM-01:30PM, KH B03

Sec. 02: MWF 12:00PM-12:50PM, KH 005 (MWF) and (TU) 10:50AM-12:05PM, KH B03

Instructor: Dr. Prince Chidyagwai

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Website: <http://math.loyola.edu/~chidyagp>

Office Hours: MW 2:00 - 3:30 PM, or by appointment

Textbook: *Single variable Calculus, Early Transcendentals (7th Edition)*, by James Stewart.

Prerequisites: A grade of at least C- or better in Calculus I.

Course Description: This course is a continuation of Calculus I (MA 251). Techniques and applications of integration; improper integrals; parametric equations and polar coordinates; sequences and series.

Course Objectives:

1. Evaluate definite and indefinite integrals using various algebraic techniques,
2. Demonstrate an understanding of integrals through various applications,
3. Determine the convergence or divergence of sequences and series, including absolute and conditional convergence and radius of convergence,
4. Define and use Taylor/Maclaurin series/polynomials,
5. Use relations defined by parametric equations and polar coordinates for applications in Calculus.

Topics: We will cover the following topics:

1. Techniques of Integration:
Integration by parts, Partial fractions, Trigonometric substitution, Powers of Trigonometric functions, tables of integrals.
2. Improper integrals.
3. Applications of Integration:
Area between curves, Volumes (Cross-sections and the Disc/Washer method), Arc length, Mean value Theorem for Integrals and average value of a function, Probability density functions.
4. Parametric Equations and Polar Coordinates:
Parametric equations, Calculus on parametric equations (tangents, area, arch length), Polar coordinates, Calculus with polar coordinates (tangents, area, arc length).

5. Sequences and series.
6. Tests of convergence:
Integral test, Comparison test, Alternating series test, absolute and conditional convergence, Ratio test, Root test.
7. Power series:
Radius/ interval of convergence, representing functions as power series.
8. Taylor/Maclaurin series and polynomials.
9. Binomial series.

Exams: There will be two in-class exams and a final exam.

Grading: Quizzes - 20%, Homework - 20%, Semester Exams - 30%, Final Exam - 30%. Final grades will be determined according to the following scale:

93-100: A	90-92: A-	87-89: B+
83-86: B	80-82: B-	77-79: C+
73-76: C	70-72: C-	68-69: D+
65-67: D	63-64: D-	0-62: F

Class participation and improving performance on the exams will be considered when assigning borderline grades.

Homework: There will be a list of suggested problems for each section of the book. This list will be posted on my website and continuously updated throughout the semester. From this list I will select a subset of problems that will be due. I recommend that you attempt every problem on this list in preparation for quizzes and exams.

Quizzes: There will be regular quizzes (almost weekly) during the semester. You will get a week notice before each quiz.

Academic Integrity and Standards of Conduct: The guidelines of academic integrity and standards of conduct are presented in the Undergraduate catalogue. The Loyola University Honor Code states that all students of the Loyola community have been equally entrusted by their peers to conduct themselves honestly on all academic assignments. In this class you may work with your peers on assigned homework. However, you should write up submissions by yourself. You may not consult your books or notes for quizzes and exams. Please refer to the Community Standards Handbook for more information and further clarification of the honor code standards, type of violations, adjudication process, and sanctions that may be imposed for violations.

Extra Help: Do not hesitate to come to my office during office hours or by appointment to discuss a homework problem or any aspect of the course. You may also want to consider tutoring offered by the department of Mathematics and Statistics. Tutoring is offered in the Math Seminar Room, Knott Hall Room 303, on Tuesday, Wednesday, and Thursday nights from 5:00-7:00 PM.

Important Dates:

Add/Drop Deadline Thursday, September 3
Withdrawal Deadline Monday, November 9
Exam 1 Tuesday, September 29 (in class)
Exam 2 Tuesday, November 3 (in class)
Final Exam (Section 01) Monday, December 14, 1:00 PM
Final Exam (Section 02) Saturday, December 12, 1:00 PM

Student Athletes: Please provide me with your athletic travel letters indicating when you will not be able to make it to class due to athletic commitments. You will be required to make up any assignments or exams that you miss.

Learning Disabilities: Any student with a disability documented with the Disability Support Service Office (DSS) requiring accommodations in this course is encouraged to contact me as soon as possible. If you have a disability that has not yet been documented, please contact the DSS Office (410-617-2602) for assistance.