Loyola University Maryland
Department of Mathematics and Statistics
MATH 251 (Calculus I)
Sec. 01: MWF 10:00 - 10:50 AM, KH 005 and (Th) 1:40 - 2:55 PM, KH B03
Sec. 02: MWF 11:00 - 11:50 AM, KH 005 and (Th) 12:15 - 01:30 PM, KH B03

Instructor: 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: MA109 or a score of 56 or better on Part II of the Math Placement Test or one year of high school calculus.

Course Description: A rigorous approach to Calculus for all majors. Topics include limits, definition, interpretation, and applications of the derivative; differentiation rules; antiderivatives; definition of definite and indefinite integrals; and the Fundamental Theorem of Calculus.

Course Objectives: Calculus is the study of "Rates of Change". We will cover the basics of differential and integral calculus in the context of real-valued functions. This course will have a strong emphasis on understanding concepts and developing problem solving skills using calculus.

Topics: We will cover the following topics:

- Limits:
  Intuitive understanding of limits, Algebraic techniques of finding limits, Continuity/ Discontinuities, One-sided limits - Vertical Asymptotes, Piecewise-defined functions, Intermediate Value Theorem, L'Hopital's Rule

- Derivatives:
  Average rates of change and instantaneous rates of change, Definition of a derivative, Relationship between differentiability and continuity, Derivative at a point, Derivative as a function, Differentiation techniques - power functions, constant rule, adding/subtracting functions, product rule,quotient rule, chain rule, implicit differentiation, Special functions and their derivatives - Trigonometric, Inverse trigonometric, Logarithmic, Exponential

- Applications of Derivatives:
  Relationship between $f(x), f'(x)$ and $f''(x)$ - sketch/match/etc. graphs going in both directions, Maxima, minima and points of inflection, Rolle's Theorem and the Mean Value Theorem, Related rates, Optimization problems, Business Applications, Antiderivatives

- Integrals:
  Riemann sums - Left-hand rule, Right-hand rule, Midpoint rule, Trapezoidal rule, Summation notation, General formula, Definition of definite integral, Indefinite and Definite Integrals, Basic antiderivatives, Substitution rule

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

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: Dot 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, January 16
Withdrawal Deadline	Thursday, March 27
Exam 1	Thursday, February 20 (in class)
Exam 2	Thursday, March 20 (in class)
Final Exam (Section 01)	Friday, May 2 9:00 AM
Final Exam (Section 02)	Monday, May 5 9:00 AM

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.