

Loyola University Maryland  
Department of Mathematics and Statistics  
Fall 2018 – MATH 251 (Calculus I)

Sec. 06: MWF 9:00 - 9:50 AM, KH 005 and (Th) 9:25 - 10:40 AM, KH 009

Sec. 07: MWF 2:00 - 2:50 PM, KH 005 and (Th) 1:40 - 2:55 PM, KH 007

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**Instructor:** Prince Chidyagwai

**Office:** Knott Hall 301d

**Office Phone:** 410-617-2710

**Email:** pchidyagwai@loyola.edu

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

**Office Hours:** MW 10:00 - 11:00AM, Th 3:30-4:30PM, or by appointment

**Textbook:** *Single variable Calculus, Early Transcendentals (8th 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 - 10%, Homework - 20%, 2 Exams - 40%, 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

*I reserve the right to use class participation when assigning borderline grades*

**Homework:** There will be two kinds of homework problems:

- WebWork problems. WebWork is a web-based homework grading system. It has some advantages (every problem gets graded, instant feedback, e.t.c) as well as disadvantages (need to sign in, the system does not tell you where the mistake is and will not accept a perfect solution). You will have unlimited attempts on most problems; however, do not hesitate to email me with questions if you find yourself stuck on a particular problem.
- Textbook problems. These will not be collected, please use them as practice problems to prepare for exams and quizzes.

It is important to keep in mind that you will learn the most by doing problems. I am there to guide you and give you the basic material that you will need to solve problems. I will drop the lowest homework score, for that reason there are no make-up homework except in the case of documented excuses.

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

**Academic Integrity:** 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.

**Course Conduct:** Learning requires attention and focus in an environment free of disruption. Loyola's code of conduct handbook defines disruptive behavior as "behavior which is disruptive to the living and learning of individuals inside and outside the classroom or of the University

community or which disregards the rights of others". Although silent, the use of technology for extracurricular purposes during class is highly disruptive to the instructor and classmates. It is rude, disrespectful, and distracts from learning. It interferes with access to an appropriate educational environment. In addition, numerous experimental studies have shown that personal technology use during class are casually related to poor performance in courses. As such, **this course has a strict ban on ALL personal technology**. This includes cell phones, laptops, and tablets. Upon the first offense, students will be issued a verbal warning. Subsequent offenses will result in a deduction of 2 points on the current week's quiz.

**Exemption Policy** Any student may petition for an exemption to the technology ban by emailing the instructor by the end of the second week of the semester. Those granted exemptions will be expected to use technology as inconspicuously as possible.

**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 .....	Friday, September 7
Withdrawal Deadline .....	Friday, November 9
Exam 1 .....	Thursday, October 11 (in class)
Exam 2 .....	Thursday, November 8 (in class)
Final Exam (Section 06) .....	Wednesday, December 19, 9:00 AM
Final Exam (Section 07) .....	Monday, December 17, 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.