MTH 1064-1 Calculus I (4.0 units)
Class Time MWF 8:30-9:35 and F 7:25-8:20
Location RS 295

Instructor Catherine Crockett, PhD
Office RS 222
Phone 619-849-2723
Email catherinecrockett@pointloma.edu
Office Hours Monday: 1-3:30
Tuesday: 9:30-11:30
Wednesday: 10:30-11:30
Thursday: 9:30-11:30
or by appointment

Textbook: Calculus 8th Edition by James Stewart
Prerequisite: MTH 1033 or equivalent
Important Dates

Exam 1 October 2
Lab Mid Term October 18
Exam 2 October 30
Exam 3 December 4
Lab Final December 13
Final exam: Monday (December 16), 7:30 to 10:00 am

Course Description:
Calculus of the elementary functions of one variable. Limits, continuity, derivatives, methods of integration and applications.

General Education:
PLNU provides a foundational course of study in the liberal arts informed by the life, death, and resurrection of Jesus Christ. In keeping with the Wesleyan tradition, the curriculum equips students with a broad range of knowledge and skills within and across disciplines to enrich major study, lifelong learning, and vocational service as Christ-like participants in the world's diverse societies and cultures.

This course is one of the components of the General Education Program at Point Loma Nazarene University, in support of the general education learning outcome: *Quantitative Reasoning: Students will be able to solve problems that are quantitative in nature*. The purpose of general education is to provide a common educational experience, to develop essential skills, and to provide a broad cultural background for personal and professional growth.

Learning Outcomes:
Students will be able to demonstrate facility with analytical concepts.

Students will be able to demonstrate facility with algebraic structures.

Students will be able to use technology to solve problems.

Students will be able to speak about their work with precision, clarity and organization.

Students will be able to write about their work with precision, clarity and organization.

Students will collaborate effectively in teams.

Students will be able to identify, locate, evaluate, and effectively and responsibly use and cite information for the task at hand.

Students will be able to gather relevant information, examine information and form a conclusion based on that information.

Students will be able to understand and create arguments supported by quantitative evidence, and they can clearly communicate those arguments in a variety of formats.

GE Learning Outcome: Students will be able to solve problems that are quantitative in nature:

Students will be able to formulate a mathematical model from a verbal description of a problem.

Students will be able it solve non-routine problems using logic and quantitative techniques.

Students will be able to construct solutions to problems using computational techniques

Grading Scheme:
Grades for the course will be based on

Homework (15% of overall grade)
Labs (10% of overall grade)
Quizzes (5% of overall grade)
Three exams (15% each; total of 45% of overall grade)
Final exam (comprehensive) (25% of overall grade).

Grading Scale: Please note, in order to pass this course- regardless of the overall course percentage- at least one test must be passed at 60% or higher. After this requirement is met the course grade will be assigned according to the following scale:

Grading Scale in Percentages				
	A	**B**	**C**	**D**
+		(87.5, 90)	(77.5, 80)	(67.5, 70)
	[92.5, 100]	[82.5, 87.5]	[72.5, 77.5]	[62.5, 67.5]
−	[90, 92.5)	[80, 82.5)	[70, 72.5)	[60, 62.5)

Homework: Homework will be assigned every class meeting. A homework assignment is late if it is not received at the start of class on the due date. No late homework will be accepted; however, the two

lowest homework scores will be dropped. Please be sure that your homework is stapled together and the problems are in order. Homework will be scored on a combination of completeness and correctness. A random selection (the same for all people) of the problems will be graded on any homework assignment.

Quizzes, Exams and Final Exam: will include problems and questions over material assigned in the text, readings and handouts, as well as material presented in class.

No examination shall be missed without prior consent by me or a well documented emergency beyond your control. In such cases, all make-up exams will occur at 8:30 am on the Saturday between classes and Final Exam Week. A score of zero will be assigned for an examination that is missed without prior consent or a well-documented emergency beyond your control. The examination schedule is included in the daily schedule. I do not intend to accept excuses such as poor communication with parents, benefactors, sport team sponsors and/or travel agents.

Final Exam: Date and Time
The final exam date and time is set by the university at the beginning of the semester and may not be changed by the instructor. This schedule can be found on the university website and in the course calendar. No requests for early examinations will be approved. Only in the case that a student is required to take three exams during the same day of finals week is an instructor authorized to change the exam date and time for that particular student.

Please note: **The Final Exam is COMPREHENSIVE. May 3, (Friday) 7:30 a.m. to 10:00 a.m.**

University Mission: Point Loma Nazarene University exists to provide higher education in a vital Christian community where minds are engaged and challenged, character is modeled and formed, and service is an expression of faith. Being of Wesleyan heritage, we strive to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.

Department Mission: The Mathematical, Information, and Computer Sciences department at Point Loma Nazarene University is committed to maintaining a curriculum that provides its students with the tools to be productive, the passion to continue learning, and Christian perspectives to provide a basis for making sound value judgments.

Attendance:
Attendance is expected at each class session. In the event of an absence you are responsible for the material covered in class and the assignments given that day.

Regular and punctual attendance at all classes is considered essential to optimum academic achievement. If the student is absent from more than 10 percent of class meetings, the faculty member can file a written report which may result in de-enrollment. If the absences exceed 20 percent, the student may be de-enrolled without notice until the university drop date or, after that date, receive the appropriate grade for their work and participation. See the Undergraduate Academic Catalog Class Attendance.

Class Enrollment: It is the student's responsibility to maintain his/her class schedule. Should the need arise to drop this course (personal emergencies, poor performance, etc.), the student has the responsibility to follow through (provided the drop date meets the stated calendar deadline established by the university), not the instructor. Simply ceasing to attend this course or failing to follow through to arrange for a change of registration (drop/add) may easily result in a grade of F on the official transcript.

Academic Accommodations:
While all students are expected to meet the minimum standards for completion of this course as established by the instructor, students with disabilities may require academic adjustments, modifications or auxiliary aids/services. At Point Loma Nazarene University (PLNU), these students are requested to register with the Disability Resource Center (DRC), located in the Bond Academic Center. (DRC@pointloma.edu or 619-849-2486). The DRC's policies and procedures for assisting such students in the development of an appropriate academic adjustment plan (AP) allows PLNU to comply with Section 504 of the Rehabilitation Act and the Americans with Disabilities Act. Section 504 (a) prohibits discrimination against students with special needs and guarantees all qualified students equal access to and benefits of PLNU programs and activities. After the student files the required documentation, the DRC, in conjunction with the student, will develop an AP to meet that student's specific learning needs. The DRC will thereafter email the student's AP to all faculty who teach courses in which the student is enrolled each semester. The AP must be implemented in all such courses.

If students do not wish to avail themselves of some or all of the elements of their AP in a particular course, it is the responsibility of those students to notify their professor in that course. PLNU highly recommends that DRC students speak with their professors during the first two weeks of each semester about the applicability of their AP in that particular course and/or if they do not desire to take advantage of some or all of the elements of their AP in that course.

Academic Honesty:
Students should demonstrate academic honesty by doing original work and by giving appropriate credit to the ideas of others. Academic dishonesty is the act of presenting information, ideas, and/or concepts as one's own when in reality they are the results of another person's creativity and effort. A faculty member who believes a situation involving academic dishonesty has been detected may assign a failing grade for that assignment or examination, or, depending on the seriousness of the offense, for the course. Faculty should follow and students may appeal using the procedure in the university Catalog. See Academic Honesty for definitions of kinds of academic dishonesty and for further policy information.

Copyright Protected Materials:

Point Loma Nazarene University, as a non-profit educational institution, is entitled by law to use materials protected by the US Copyright Act for classroom education. Any use of those materials outside the class may violate the law.

Credit Hour: In the interest of providing sufficient time to accomplish the stated course learning outcomes, this class meets the PLNU credit hour policy for a 4.0-unit class delivered over 15 weeks. Specific details about how the class meets the credit hour requirements can be provided upon request.

Cell Phones: Turn off any cell phone, pager or things that make noise while you are in class. Also, do not text or work on other classes while in class -to do so is disrespectful to me and your classmates.

General Advice: The key to success in this class is to attend lectures regularly and do your homework. You learn mathematics by doing it yourself. You should expect to spend approximately two hours outside of class for every one hour in class working on homework and going over concepts. When doing homework, please note it is normal to not be able to do every problem correct on the first attempt. Do not be discouraged, instead seek help.

Sources of Help:

1. Me. If you have questions, ask me. See office hours.
2. FREE TUTORING- Math Learning Center-hours are posted on the door.
3. Other classmates. Form study groups! Work together!

Tentative Schedule and Homework assignment: While topic order may change — the test dates will not.

Week	Monday	Wednesday	Friday
1 9/2- 9/6	9/2 **No Class**	9/4 1.1 Four ways to Represent a Function 1.2 Mathematical Models	9/6 1.3 New Functions from Old Functions
2 9/9- 9/13	9/9 1.4 The Tangent and Velocity Problems	9/11 1.5 The Limit of a Function	9/13 1.6 Calculating limits using the limit laws
3 9/16- 9/20	9/16 1.7 The precise definition of a limit	9/18 1.8 Continuity	9/20 2.1 Derivatives and rates of change
4 9/23- 9/27	9/23 2.2 The derivative as a function	9/25 2.3 Differentiation formulas	9/27 2.4 Derivatives of Trigonometric functions
5 9/30- 10/4	9/30 Review	10/2 **Exam #1**	10/4 2.5 The chain Rule
6	10/7	10/9 2.7 Rates of Change	10/11 2.8 Related rates

10/7-10/11	2.6 Implicit Differentiation		
7 10/14-10/18	10/14 2.8 Related rates	10/16 * 2.9 Linear Approximations and differentials	10/18 * 3.1 Maximum and Minimum Values **Lab Mid Term**
8 10/21-10/25	10/21 3.1 Maximum and Minimum Values	10/23 3.2 The Mean Value Theorem	10/25 No Class Fall Break Day
9 10/28-11/1	10/28 Review	10/30 **Exam #2**	11/1 3.3 How derivatives affect the shape of a graph
10 11/4-11/8	11/4 3.4 Limits at infinity	11/6 3.5 Summary of curve sketching	11/8 3.7 Optimization Problems
11 11/11-11/15	11/11 3.7 Optimization Problems	11/13 3.9 Anti derivatives	11/15 4.1 Areas and distances
12 11/18-11/22	11/18 4.2 The definite integral 4.3 The fundamental theorem of calculus	11/20 4.3 The fundamental theorem of calculus	11/22 4.4 Indefinite integrals and the Net change theorem
13 11/25-11/29	11/25 4.5 The substitution rule	11/27 No Class	11/29 No Class
14 12/2-12/6	12/2 Review	12/4 **Exam #3**	12/6 5.1 Area between curves
15 12/9-12/13	12/9 5.2 Volumes	12/11 5.3 Volumes by cylindrical shells	12/13 Review Last day of classes **Lab Final**
Final Exams Week 12/16-12/20	12/16 Final Exam 7:30-10:00	12/18	12/20