MTH 144-1	Calculus with Applications (4.0 units)
Class Time	MWF 8:30-9:35
Location	RLC 108

Instructor	Catherine Crockett, PhD
Office	RS 226
Phone	619-849-2723
Email	catherinecrockett@pointloma.edu

Office Hours	Monday: 11- 12, 2-4 Tuesday: 9- 9:45 at Liberty Station room 202, 3-4 Wednesday: 11-12 Thursday: 3-4 Friday: 11-12, 2:30-3:30 or by appointment
Textbook:	Calculus & its Applications. Goldstein, Lay, Schneider, Asmar. Pearson, 14th Edition.
Prerequisite:	MTH 123 or 133 (or equivalent).

Important Dates

Exam 1	**Feb 5**
Exam 2	**Mar 14**
Exam 3	**Apr 16**
Final exam	**May 2 (Wednesday) 7:30 am – 10:00 am**

Course Description:
Differential and integral calculus of the elementary functions of one variable. Limits, continuity, derivatives, integrals and applications.

General Education:
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:
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 to solve non-routine problems using logic and quantitative techniques.

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

Grading: Grades for the course will be based on
Homework (25%)
Three exams (15% each; total of 45%)
Final exam (comprehensive) (30%).

Homework (25%): 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.

Tests (15% each) and Final Exam (30%): Tests and the 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. 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 2, (Wednesday) 7:30 a.m. to 10:00 a.m.**

Grading Scale: Course grades 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)

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 Attendance Policy in the in the Undergraduate Academic Catalog.

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: If you have a diagnosed disability, please contact PLNU's Disability Resource Center (DRC) within the first two weeks of class to demonstrate need and to register for accommodation by phone at 619-849-2486 or by e-mail at DRC@pointloma.edu. See Disability Resource Center for additional information. For more details see the PLNU catalog under Academic Accommodations. Students with learning disabilities who may need accommodations should discuss options with the instructor during the first two weeks of class.

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 the catalog 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, RS-230. 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	M	W	F
1	1/9 (Tuesday) Introduction 1.1: Slope of a line	1/10 1.2: Slope of a curve at a point	1/12 1.3: The derivative
2	1/15 MLK Day no class	1/17 1.4: Limits & Derivatives	1/19 1.5: Differentiability& continuity
3	1/22 1.6: Some rules for differentiation 1.7: More about derivatives	1/24 1.8: Derivatives as a rate of change	1/26 2.1: Describing Graphs of functions

4	1/29 2.2: First & Second Derivative Rules	1/31 2.3: First & second derivative tests	2/2 **Review**
5	2/5 **Exam #1 (Chapter 1-2.3)**	2/7 2.5: Optimization Problems	2/9 3.1: The Product & Quotient Rules
6	2/12 3.2: The Chain Rule	2/14 3.3: Implicit differentiation & related rates	2/16 4.1: Exponential functions
7	2/19 4.2: e^x	2/21 4.3: Differentiation of e^x	2/23 4.4: ln x
8	2/26 4.5: The derivative of ln x	2/28 5.1: exponential growth/ decay	3/2 5.2: Compound Interest
Spring Break 3-5 to 3-9			
9	3/12 **Review**	3/14 **Exam #2 (2.4 -5.2**)	3/16 6.1: Antidifferentiation
10	3/19 6.2: The Definite Integral and the Net Change of a Function	3/21 6.3: Definite Integrals and FTC	3/23 6.4: Area in xy- plane
11	3/26 6.5: Applications of Definite Integral	3/28 8.1 & 8.2: Review of trig. functions	3/30 Easter Break No class
12	4/2 Easter Break No class	4/4 8.3: Differentiation & integration of sine & cosine	4/6 8.4: The Tangent& other Trig functions
13	4/9 9.1: Integration by Substitution	4/11 9.2: Integration by Parts	4/13 **Review**
14	4/16 **Exam #3 (Chapter 5.1-9.2)**	4/18 9.3: Evaluation of Definite Integrals	4/20 11.1: Taylor Polynomials
15	4/23 11.2: The Newton- Raphson Algorithm	4/25 Finance Mathematics	4/27 Finance Mathematics **Review**
Final Exam Week	4/30	**5/2** **Final Exam 7:30-10:00 a.m.**	