

	<p>Department/School Name: Department of Mathematical, Information, and Computer Sciences</p> <p>Course Number and Name: MTH 1073 Business Calculus</p> <p>Number of Units: 3</p>
<p>Spring 2025 January 13th - May 9th</p>	

Meetings	Final Exam	Instructor:	Email:	Phone:	Office Hours:
<p>TR 9:30-10:45</p> <p>LA 102</p>	<p>10:30-1:00 pm</p> <p>Thursday 8-May-2025</p>	<p>Greg Crow, Ph.D.</p>	<p>gcrow@pointloma.edu</p>	<p>619.849.2604</p>	<p>Posted in Canvas</p>

PLNU Mission

To Teach ~ To Shape ~ To Send

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.

General Education Mission

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 culture.

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.

Course Description

MTH 1073 Business Calculus (GE) (3 Units)

A calculus course intended for those studying business economics, or other related business majors. This course covers differential and integral calculus of elementary functions with an emphasis on business applications. This is a brief calculus course and not appropriate for students majoring in science, computer science or mathematics.

Prerequisite: MTH 1013 (or equivalent).

General Education Learning Outcome

1. Students will be able to solve problems that are quantitative in nature.

Course Learning Outcomes

1. Students will be able to formulate a mathematical model from a verbal description of a problem.
2. Students will be able to solve non-routine problems using logic and quantitative techniques.
3. Students will be able to construct solutions to problems using computational techniques.

Required Texts and Recommended Study Resources

1. Textbook: *Calculus and its Applications*, Brief Version, 12th Edition by Bittinger, Ellenbogen, Surgent & Kramer (ISBN 978-0-13-516488-4)
2. A cheap (\$10-\$25) scientific calculator other than your phone, tablet, pad, or computer (with at least x^y , Ln, and Cos)

Course Credit Hour Information

In the interest of providing sufficient time to accomplish the stated Course Learning Outcomes, this class meets the PLNU credit hour policy for a 3 unit class delivered over fifteen weeks. Specific details about how the class meets the credit hour requirement can be provided upon request. (Based on 37.5 hours of student engagement per credit hour.)

Assessment and Grading

Graded Components

- **Weekly Classwork:** Attendance at each class is required. In these class meetings, we will have lectures, work on activities and problems. Some classwork will be graded, and for some you will get full credit just for attempting.
- **Written Homework:** The homework is designed to allow you to grasp the concepts of Calculus; it is not an end in itself. The homework problems will be taken from the Textbook and handwritten on paper. There may also be other activities that are completed as homework. Each homework set will be due on Thursday of the week after it is assigned. Please see the schedule below. Late homework will not be accepted without prior consent or a well-documented emergency beyond your control. Up to a maximum of one homework assignment will be accepted up to 3 days late provided that consent is received from the professor before it is due. Written homework that is submitted late without prior consent will be recorded with a score of zero. The lowest homework score will be dropped prior to computing the final course grade.

In the event that the class is prohibited from meeting in person, please scan or photograph the pages, and upload the file to Canvas as a .pdf, .jpg, .jpeg, .png, or .docx (but not Google Docs). If you take a photograph with your phone, then please turn off the setting for *Live Photos* or *Motion Photo* prior to taking the picture. If you use Google Docs, please export to a .pdf and upload that file.

- **Examinations and the Final Examination:** There will be two Mid-Semester Examinations and a comprehensive Final Examination. Both Mid-Semester Examinations and the Final Examination will include problems and questions over material assigned in the text, readings and handouts, as well as material presented in class. The examination schedule is included in the daily schedule. The instructor will not accept excuses such as poor communication with parents, benefactors, surf team sponsors and/or travel agents. No examination shall be missed without prior consent 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.
- **Final Exam: Scheduled on Thursday 8-May-2025, from 10:30-1:00 pm in our classroom.**

Grade Component Percentages

Grading Distribution	Percent
Final Examination	30
Two Examinations at 20% each	40
Written Homework	25
Classwork & Participation	5
Total	100

Grading Scale

Grades are based on the number of points accumulated throughout the course with the following exception. A student must pass at least one of Examination 1, Examination 2, or the Final Examination in order to pass the class. That is, a score of 60% must be achieved on one of Examination 1, Examination 2, or the Final Exam or else the final grade will be an F regardless of all other point totals.

Approximate minimal percentages required to obtain a given grade are

Standard Grade Scale Based on Percentages					
	A	B	C	D	F
+		[87.5-90.0)	[77.5-80.0)	[67.5-70.0)	
	[92.5-100]	[82.5-87.5)	[72.5-77.5)	[62.5-67.5)	[0.0-60.0)

Standard Grade Scale Based on Percentages					
	A	B	C	D	F
-	[90.0-92.5)	[80.0-82.5)	[70.0-72.5)	[60.0-62.5)	

Final Examination Policy

Successful completion of this class requires taking the final examination on its scheduled day. The final examination schedule is posted on the [Traditional Undergraduate Records: Final Exam Schedules](#) site. If you find yourself scheduled for three (3) or more final examinations on the same day, you are authorized to contact each professor to arrange a different time for one of those exams. However, unless you have three (3) or more exams on the same day, no requests for alternative final examinations will be granted.

Incompletes and Late Assignments

All assignments are to be submitted/turned in by the beginning of the class session when they are due—including assignments posted in Canvas. We understand that life happens, if you contact your instructor prior to the due date of the assignment you may request one extension as indicated above. Incompletes will only be assigned in extremely unusual circumstances.

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.

Artificial Intelligence (AI) Policy

You are allowed to use Artificial Intelligence (AI) tools (e.g., ChatGPT, Gemini Pro 1.5, GrammarlyGo, Perplexity, etc) to generate ideas, but you are not allowed to use AI tools to generate content (text, video, audio, images) that will end up in any work submitted to be graded for this course. If you have any doubts about using AI, please gain permission from the instructor.

PLNU Academic Accommodations Policy

PLNU is committed to providing equal opportunity for participation in all its programs, services, and activities in accordance with the Americans with Disabilities Act (ADA). Students with disabilities may request course-related accommodations by contacting the Educational Access Center (EAC), located in the Bond Academic Center (EAC@pointloma.edu or 619-849-2486). Once a student's eligibility for an accommodation has been determined, the EAC will work with the student to create an Accommodation Plan (AP) that outlines allowed accommodations. The EAC makes accommodations available to professors at the student's request.

PLNU highly recommends that students speak with their professors during the first two weeks of each semester/term about the implementation of their AP in that particular course. Accommodations are not retroactive so clarifying with the professor at the outset is one of the best ways to promote positive academic outcomes.

Students who need accommodations for a disability should contact the EAC as early as possible (i.e., ideally before the beginning of the semester) to assure appropriate accommodations can be provided. It is the student's responsibility to make the first contact with the EAC. Students cannot assume that because they had accommodations in the past, their eligibility at PLNU is automatic. All determinations at PLNU must go through the EAC process. This is to protect the privacy of students with disabilities who may not want to disclose this information and are not asking for any special accommodations.

Additional Course Information:

Additional PLNU policies and practices that apply to this course can be found at the following link:

[Additional PLNU policies and practices that apply](#)

	Sunday	Mon	Tuesday	Wed	Thursday	Fri	Sat
January	12	13	14 R.1-R.3: Algebra Review	15	16 R.4-R.7: Algebra Review	17	18
	19	20 MLK Day	21 1.1: Limits: A Numerical and Graphical Approach 1.2: Algebraic Limits and Continuity	22	23 1.2: Algebraic Limits and Continuity 1.3: Average Rates of Change	24	25
	26	27	28 1.4: Differentiation Using Limits of Difference Quotients	29	30 1.5: Leibniz Notation and the Power and Sum-Difference Rules	31	1
February	2	3	4 1.6: The Product and Quotient Rules Spiritual Renewal	5	6 1.7: The Chain Rule Week	7	8
	9	10	11 2.1: Exponential and Logarithmic Functions of e 2.2: Derivatives of Exponential (Base- e) Functions	12	13 2.3: Derivatives of Natural Logarithmic Functions 2.6: The Derivatives of a^x and $\log_a x$	14	15
	16	17	18 Applications: 2.4: Uninhibited and Limited Growth Models 2.5: Exponential Decay	19	20 3.1: Using First Derivatives to Classify Maximum and Minimum Values and Sketch Graphs	21	22
	23	24	25 Review for the Exam	26	27 Exam 1	28	1
March	2	3	4 3.2 Using Second Derivatives to Classify Maximum and Minimum Values and Sketch Graphs	5	6 Exam 1 Returned 3.4: Optimization: Finding Absolute Maximum and Minimum Values	7	8
	9	10	11 Spring Break	12	13 Week	14	15
	16	17	18 3.5: Optimization: Business, Economics, and General Applications	19	20 3.6: Marginals, Differentials, and Linearization 3.8: Implicit Differentiation	21	22
	23	24	25 3.8: Implicit Differentiation 3.7: Elasticity of Demand	26	27 4.1: Antidifferentiation	28	29
	30	31	1 4.2: Antiderivatives as Areas	2	3 4.3: Area and Definite Integrals	4	5
April	6	7	8 4.4: Properties of Definite Integrals: Additive Property, Average Value, and Moving Average	9	10 Review for the Exam	11	12
	13	14	15 Exam 2	16	17 Easter Recess	18	19
	20 Easter	21 Easter Recess	22 Amortization	23	24 Amortization	25	26
	27	28	29 Amortization	30	1 Review for the Exam	2 **	3
May	4	5	6	7	8-May Final Exam 10:30 AM –1:00 PM	9	10

** The last *Written Homework* (April 22–May 1) will not be accepted after 1:00 pm on 2-May-2025.