

MTH1073 Business Calculus (3 units)
TTh (Sec. 1 9:30-10:45, Sec. 2 11-12:15)

Instructor: Michelle Freed
Office Hours: See Canvas

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Course Description

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.

Prerequisites: MTH113 or Equivalent

Required Materials

Online Text (Access Code Required)

Calculus and its Applications 12th Edition by Bittinger/Ellenbogen/Surgent

ISBN: 9780135225066

Course Goals

Students should gain the ability to properly identify types of differential equations and apply a wide range of analytical methods for solving differential equations. Students should be able to apply the basic numerical methods for solving differential equations.

Learning Outcomes

- 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.

General Education Learning Outcomes

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

General Education Statement

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.

Examinations

There will be two midterms and a final exam. All midterms will be completed during our regularly scheduled class time and the final exam will be during the time in the Final Exam Schedule.

Sec. 1 Final Thursday December 3, 2020

Sec. 2 Final Tuesday December 1, 2020

Missed Exam Policy

No examination shall be missed without prior consent 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.

There is no make-up for the Final Exam. 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.

Grading Policies

Grades will be weighted in the following manner:

Grade Distribution	
Two Tests at 20% each	40%
Final Exam	30%
Video Notes	5%
Participation and Attendance	3%
Online Homework	12%
Group Extra Practice Homework	10%
Total	100%

Homework: Homework will be assigned weekly, online through Canvas and the digital textbook. Homework must be completed on time by the due date, unless arrangements have been made with the instructor prior to the due date, or an extreme emergency. One of the weekly homework assignments will be dropped from your grade.

Video Notes: Each week you will be assigned video lectures covering the course content. You will need to take notes on these videos, as you would if you were in class. You will have to submit a photo of your notes on Canvas to indicate you watched the videos. Late submissions will not be counted, but one will be dropped from your final grade.

Participation: Participation points will be awarded for attending the weekly practice sessions, by roll taken at a random time during the Zoom session. If you cannot make a week, you may watch the Zoom recordings and post your notes in Canvas. These must be completed by Friday of the week of the session or they will be considered late and not accepted.

Group Extra Practice Homework: These assignments are designed to help you review the material and organize your thoughts as we move throughout the semester. You will be responsible for posting several examples of key ideas in Canvas along with a short video explaining the solution as a group.

Late work: work is due by the date assigned in the course calendar. Late assignments will not be accepted unless prior arrangements have been made with the instructor, or due to an emergency beyond your control. One homework, one set of video notes and one of the extra practice assignments will be dropped to allow for when life “happens.”

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 Exam 1, Exam 2, or the Final Exam in order to pass the class. That is, a score of 60% must be achieved on one of the Exams, 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:

Grading Scale in Percentages					
	A	B	C	D	F
+		[87.5, 90)	[77.5, 80)	[67.5, 70)	
	[92.5, 100]	[82.5, 87.5)	[72.5, 77.5)	[62.5, 67.5)	[0,60)
-	[90, 92.5)	[80, 82.5)	[70, 72.5)	[60, 62.5)	

Attendance Policy

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. Here is the university's stated policy on attendance:

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 [https://catalog.pointloma.edu/content.php?catoid=35&navoid=2136#Class Attendance](https://catalog.pointloma.edu/content.php?catoid=35&navoid=2136#Class%20Attendance) in the Undergraduate Academic Catalog.

If you miss 10% of the class, you will receive a warning. If you miss 20% of the class, you will be automatically de-enrolled.

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 https://catalog.pointloma.edu/content.php?catoid=35&navoid=2136#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 3 unit class delivered over 16 weeks. Specific details about how the class meets the credit hour requirements can be provided upon request.

Component	Total Hours
Video Notes & Activities (11 at 2 hr. each)	22
Problem Solving Zooms (11 at 0.5 hr. each)	16.5

Extra practice group work (11 at 0.5 hr each)	16.5
Homework (11 at 3 hr each)	33
Reading (11 weeks at 2 hours each)	22
Exams	2.5
Final	2.5
Review Zooms and intro Zoom	4
Project	2
Total	121

Point Loma Nazarene 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.

Final Exam:

Sec. 1 Final Thursday December 3, 2020 10:30-1

Sec. 2 Final Tuesday December 1, 2020 10:30-1

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 consider changing the exam date and time for that particular student.

M	T	W	Th	F
8/17/20	8/18/20	8/19/20	8/20/20	8/21/20
	Intro Zoom (30 min)		Notes Due (1.1)	
8/24/20	8/25/20	8/26/20	8/27/20	8/28/20
HW 1 Due (1.1) & Review	Notes Due (1.2 & 1.3)		Problem Solving Zoom	
8/31/20	9/1/20	9/2/20	9/3/20	9/4/20
HW 2 (1.2 & 1.3) Due EP 1 Due	Notes Due (1.4, 1.5 & 1.6)		Problem Solving Zoom	
9/7/20	9/8/20	9/9/20	9/10/20	9/11/20
HW 3 Due (1.4, 1.5 & 1.6) EP 2 Due	Notes Due (1.7, 1.8, & 2.1)		Problem Solving Zoom	
9/14/20	9/15/20	9/16/20	9/17/20	9/18/20
HW 4 Due (1.7, 1.8, & 2.1) EP 3 Due	Notes Due (2.2, 2.3 & 2.4)		Problem Solving Zoom	
9/21/20	9/22/20	9/23/20	9/24/20	9/25/20
HW 5 Due (2.2, 2.3 & 2.4) EP 4 Due	Zoom Review		Exam I	
9/28/20	9/29/20	9/30/20	10/1/20	10/2/20
	Notes Due (2.6, 3.1 & 3.2)		Problem Solving Zoom	
10/5/20	10/6/20	10/7/20	10/8/20	10/9/20
HW 6 Due (2.6, 3.1 & 3.2) EP 5 Due	Notes Due (3.4 & 3.5)		Problem Solving Zoom	
10/12/20	10/13/20	10/14/20	10/15/20	10/16/20
HW 7 Due (3.4 & 3.5) EP 6 Due	Notes Due (3.6 & 3.7)		Problem Solving Zoom	
10/19/20	10/20/20	10/21/20	10/22/20	10/23/20
HW 8 Due (3.6 & 3.7) EP 7 Due	Notes Due (4.1, 4.2 & 4.3)		Problem Solving Zoom	
10/26/20	10/27/20	10/28/20	10/29/20	10/30/20
HW 9 Due (4.1, 4.2 & 4.3) EP 8 Due	Notes Due (4.4 & 4.5)		Problem Solving Zoom	
11/2/20	11/3/20	11/4/20	11/5/20	11/6/20

HW 10 Due (4.4 & 4.5) EP 9 Due	Zoom Review		Exam II	
11/9/20	11/10/20	11/11/20	11/12/20	11/13/20
	Notes Due (4.6 & Finance)		Problem Solving Zoom	
11/16/20	11/17/20	11/18/20	11/19/20	11/20/20
HW 11 Due (4.6) & finance worksheet EP 10 Due	Extra Practice		Review Zoom	
11/23/20	11/24/20	11/25/20	11/26/20	11/27/20
EP 11 Due	Review Zoom (Optional)	Thanksgiving Break		
11/30/20	12/1/20	12/2/20	12/3/20	12/4/20
	Sec 2 Final 10:30-1		Sec 1 Final 10:30-1	