

Point Loma Nazarene University

Department/School Name: Mathematical, Information and Computer Sciences

Course Number and Name: MTH1053 Mathematical Analysis for Business and Economics

Number of Units: 3

Tuesday/Thursday 1:30-2:45 PM RS295

Final Exam: Tuesday April 30, 2024, 1:30-4:00 PM

Spring 2024

Instructor: Prof Aceneth Foster
Phone: 619-849-2219
Email: afoster@pointloma.edu
Office hours: Tuesdays/Thursdays 12:30-1:15, or by appointment, in RS210

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.

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 1053 - Mathematical Analysis for Business and Economics (3 Units)

This course focuses on learning and using basic mathematical tools that are fundamental to business applications. Applications of these tools include: supply and demand, optimization, cost-benefit analysis, equilibrium (systems of equations), interest, and loan amortization.

Prerequisite(s): MTH 1013 or equivalent.

COURSE LEARNING OUTCOMES

1. Students will develop an ability to use mathematics to analyze supply and demand.
2. Students will be able to use mathematics to solve a variety of interest problems.
3. Students will develop an ability to use mathematics to solve equilibrium, optimization, and cost-benefit problems

REQUIRED TEXTS AND RECOMMENDED STUDY RESOURCES

Introductory Mathematical Analysis for Business, Economics, and the Life and Social Sciences, 13th Edition

Ernest F. Haeussler, Richard S. Paul, and Richard J. Wood

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

- **Homework:** You may work with other people on your homework, but each individual will be responsible for writing up the entire homework assignment and turning it in. The homework is due at the start of class on Thursday.
- **Examinations and the Final Examination.** 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. No examination shall be missed without prior consent or a well-documented emergency beyond your control. In that case, the make-up exam will take place at 8:30 AM on the Saturday before final exams (April 27, 2024). 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 Examination Policy.** Successful completion of this class requires taking the cumulative final examination on its scheduled day. The final examination

schedule is posted on the [Class 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.

- **Late work will not be accepted** without prior consent or a well-documented emergency.
- The examination schedule is included in the daily schedule. This instructor does not intend to accept excuses such as poor communication with parents, benefactors, surf team sponsors and/or travel agents.

Grading Distribution	Percent
Two Examinations at 20% each	40
Final Exam	30
Homework	30
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 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:

Standard Grade Scale Based on 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	

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. 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.

SPIRITUAL CARE

Please be aware PLNU strives to be a place where you grow as whole persons. To this end, we provide resources for our students to encounter God and grow in their Christian faith.

If you have questions, a desire to meet with the chaplain or have prayer requests you can contact your professor or the [Office of Spiritual Life and Formation](#).

STATE AUTHORIZATION

State authorization is a formal determination by a state that Point Loma Nazarene University is approved to conduct activities regulated by that state. In certain states outside California, Point Loma Nazarene University is not authorized to enroll online (distance education) students. If a student moves to another state after admission to the program and/or enrollment in an online course, continuation within the program and/or course will depend on whether Point Loma Nazarene University is authorized to offer distance education courses in that state. It is the student's responsibility to notify the institution of any change in his or her physical location. Refer to the map on [State Authorization](#) to view which states allow online (distance education) outside of California.

PLNU COPYRIGHT POLICY

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.

PLNU ACADEMIC HONESTY POLICY

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 PoliciesLinks to an external site.](#) for definitions of kinds of academic dishonesty and for further policy information.

ARTIFICIAL INTELLIGENCE (AI) POLICY

Use of Artificial Intelligence (AI) tools (e.g, ChatGPT, iA Writer, Marmot, Botowski) in creating written work for this class is not permitted, and use of these tools will be treated as plagiarism.

PLNU ACADEMIC ACCOMMODATIONS POLICY

PLNU is committed to providing equal opportunity for participation in all its programs, services, and activities. 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 issue an academic accommodation plan ("AP") to all faculty who teach courses in which the student is enrolled each semester.

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 and/or if they do not wish to utilize some or all of the elements of their AP in that course.

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.

LANGUAGE AND BELONGING

Point Loma Nazarene University faculty are committed to helping create a safe and hospitable learning environment for all students. As Christian scholars we are keenly aware of the power of language and believe in treating others with dignity. As such, it is important that our language be equitable, inclusive, and prejudice free. Inclusive/Bias-free language is the standard outlined by all major academic style guides, including MLA, APA, and Chicago, and it is the expected norm in university-level work. Good writing and speaking do not use unsubstantiated or irrelevant generalizations about personal qualities such as age, disability, economic class, ethnicity, marital status, parentage, political or religious beliefs, race, gender, sex, or sexual orientation. Inclusive language also avoids using stereotypes or terminology that demeans persons or groups based on age, disability, class, ethnicity, gender, race, language, or national origin. Respectful use of language is particularly important when referring to those outside of the religious and lifestyle commitments of those in the PLNU community. By working toward precision and clarity of language, we mark ourselves as serious and respectful scholars, and we model the Christ-like quality of hospitality.

You may report an incident(s) using the [Bias Incident Reporting Form](#)[Links to an external site.](#).

SEXUAL MISCONDUCT AND DISCRIMINATION

In support of a safe learning environment, if you (or someone you know) have experienced any form of sexual discrimination or misconduct, including sexual assault, dating or domestic violence, or stalking, know that accommodations and resources are available through the Title IX Office at pointloma.edu/Title-IX. Please be aware that under Title IX of the Education Amendments of 1972, faculty and staff are required to disclose information about such misconduct to the Title IX Office.

If you wish to speak to a confidential employee who does not have this reporting responsibility, you can contact Counseling Services at counselingservices@pointloma.edu or find a list of campus pastors at pointloma.edu/title-ix.

PLNU ATTENDANCE AND PARTICIPATION POLICY

Regular and punctual attendance at all class sessions is considered essential to optimum academic achievement. If the student is absent for more than 10 percent of class sessions, the faculty member will issue a written warning of 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.

In some courses, a portion of the credit hour content will be delivered **asynchronously** and attendance will be determined by submitting the assignments by the posted due dates. See [Academic Policies](#) in the Undergraduate Academic Catalog. If absences exceed these limits but are due to university-excused health issues, an exception will be granted.

Asynchronous Attendance/Participation Definition

A day of attendance in asynchronous content is determined as contributing a substantive note, assignment, discussion, or submission by the posted due date. Failure to meet these standards will result in an absence for that day. Instructors will determine how many asynchronous attendance days are required each week.

USE OF TECHNOLOGY

In order to be successful in the online or hybrid environment, you'll need to meet the minimum technology and system requirements; please refer to the [Technology and System Requirements](#) information. Additionally, students are required to have headphone speakers, microphone, or webcams compatible with their computer available to use. Please note that any course with online proctored exams require a computer with a camera (tablets are not compatible) to complete exams online.

Problems with technology do not relieve you of the responsibility of participating, turning in your assignments, or completing your class work.

LOMA WRITING CENTER

The Loma Writing Center exists to help all members of the PLNU community cultivate transferable writing skills to engage their academic, professional, personal, and spiritual communities. We work toward this goal by conducting one-on-one consultation sessions, supporting writing education across the PLNU community, and participating in ongoing writing center research.

Getting feedback from the Loma Writing Center while you're in the process of working on an assignment is a great way to improve the quality of your writing and develop as a writer. You are encouraged to talk with a trained writing consultant about getting started on an assignment, organizing your ideas, finding and citing sources, revising, editing for grammar and polishing final drafts, and more. For information about how to make in-person or online appointments, see [Loma Writing Center webpage](#) or visit the Loma Writer Center on the first floor of the Ryan Library, room 221.

Quick Links to Resources

[Netiquette Guidelines](#) | [Help & Technical Support](#) | [Technology & System Requirements](#) | [Canvas Student Guides](#)

Course Summary:

Date	Details	Due
Mon Mar 1, 2021	Page Week 1: Overview	to do: 8am
	Page Week 1: Videos, Links and Handouts	to do: 11:59pm
Tue Mar 2, 2021	Page Week 1: Class Zoom Information	to do: 9:30am
Fri Mar 5, 2021	Assignment Week 1: Class Activity 1	due by 11:59pm
Mon Mar 8, 2021	Page Week 2: Overview	to do: 8am
	Page Week 2: Videos, Links and Handouts	to do: 11:59pm
Tue Mar 9, 2021	Page Meet Your Instructor	to do: 11:59pm
Fri Mar 12, 2021	Assignment Week 2: Class Activity 2	due by 11:59pm
Mon Mar 15, 2021	Page Week 3: Overview	to do: 8am
	Page Week 3: Videos, Links and Handouts	to do: 11:59pm
Fri Mar 19, 2021	Assignment Week 3: Class Activity 3	due by 11:59pm
Mon Mar 22, 2021	Page Week 4: Overview	to do: 8am
	Page Week 4: Videos, Links and Handouts	to do: 11:59pm
Fri Mar 26, 2021	Assignment Week 4: Class Activity 4	due by 11:59pm
Mon Mar 29, 2021	Page Week 5: Overview	to do: 8am
	Page Week 5: Videos, Links and Handouts	to do: 11:59pm

Date	Details	Due
Fri Apr 2, 2021	Assignment Week 5: Class Activity 5	due by 11:59pm
Mon Apr 5, 2021	Page Week 6: Overview	to do: 8am
	Page Week 6: Videos, Links and Handouts	to do: 11:59pm
Mon Apr 12, 2021	Page Week 7: Overview	to do: 8am
	Page Week 7: Videos, Links and Handouts	to do: 11:59pm
Fri Apr 16, 2021	Assignment Week 7: Class Activity 6	due by 11:59pm
Mon Apr 19, 2021	Page Week 8: Overview	to do: 8am
	Page Week 8: Videos, Links and Handouts	to do: 11:59pm
Fri Apr 23, 2021	Assignment Week 8: Class Activity 7	due by 11:59pm
Mon Apr 26, 2021	Page Week 9: Overview	to do: 8am
	Page Week 9: Videos, Links and Handouts	to do: 11:59pm
Fri Apr 30, 2021	Assignment Week 9: Class Activity 8	due by 11:59pm
Mon May 3, 2021	Page Week 10: Overview	to do: 8am
	Page Week 10: Videos, Links and Handouts	to do: 11:59pm
Fri May 7, 2021	Assignment Week 10: Class Activity 9	due by 11:59pm
Mon May 10, 2021	Page Week 11: Overview	to do: 8am
	Page Week 11: Videos, Links and Handouts	to do: 11:59pm

Date	Details	Due
Mon May 17, 2021	Page Week 12: Overview	to do: 8am
	Page Week 12: Videos, Links and Handouts	to do: 11:59pm
Fri May 21, 2021	Assignment Week 12: Class Activity 10	due by 11:59pm
Mon May 24, 2021	Page Week 13: Overview	to do: 8am
	Page Week 13: Videos, Links and Handouts	to do: 11:59pm
Fri May 28, 2021	Assignment Week 13: Class Activity 11	due by 11:59pm
Mon May 31, 2021	Page Week 14: Overview	to do: 8am
	Page Week 14: Videos, Links and Handouts	to do: 11:59pm
Fri Jun 4, 2021	Assignment Week 14: Class Activity 12	due by 11:59pm
Mon Jun 7, 2021	Page Week 15: Overview	to do: 8am
Mon Jan 17, 2022	Assignment Week 2: Video Notes and Problems	due by 11:59pm
Wed Jan 19, 2022	Assignment Class Activity 1/18	due by 11:59pm
Fri Jan 21, 2022	Assignment Class Activity 1/20	due by 11:59pm
Mon Jan 24, 2022	Assignment Week 3: Video Notes and Problems	due by 11:59pm
Thu Jan 27, 2022	Assignment Class Activity 1/25	due by 3:59pm
Fri Jan 28, 2022	Assignment Class Activity 1/27	due by 11:59pm
Mon Jan 31, 2022	Assignment Week 4: Video Notes and Problems	due by 11:59pm

Date	Details	Due
Wed Feb 2, 2022	Assignment Class Activity 2/1	due by 11:59pm
Fri Feb 4, 2022	Assignment Class Activity 2/3	due by 11:59pm
Mon Feb 7, 2022	Assignment Week 5: Video Notes and Problems	due by 11:59pm
Fri Feb 11, 2022	Assignment Class Activity 2/10	due by 11:59pm
Mon Feb 21, 2022	Assignment Week 7: Video Notes and Problems	due by 11:59pm
Wed Feb 23, 2022	Assignment Class Activity 2/22	due by 11:59pm
Fri Feb 25, 2022	Assignment Class Activity 2/24	due by 11:59pm
Mon Feb 28, 2022	Assignment Week 8: Video Notes and Problems	due by 11:59pm
Wed Mar 2, 2022	Assignment Class Activity 3/1	due by 11:59pm
Fri Mar 4, 2022	Assignment Class Activity 3/3	due by 11:59pm
Mon Mar 14, 2022	Assignment Week 9: Video Notes and Problems	due by 11:59pm
Wed Mar 16, 2022	Assignment Class Activity 3/15	due by 11:59pm
Thu Mar 17, 2022	Assignment Notes for Thursday 3/17	due by 11:59pm
Fri Mar 18, 2022	Assignment Class Activity 3/17	due by 11:59pm
Mon Mar 21, 2022	Assignment Week 10: Video Notes and Problems	due by 11:59pm
Wed Mar 23, 2022	Assignment Class Activity 3/22	due by 11:59pm
Fri Mar 25, 2022	Assignment Class Activity 3/24	due by 11:59pm

Date	Details	Due
Mon Mar 28, 2022	Assignment Week 11: Video Notes and Problems	due by 11:59pm
Wed Mar 30, 2022	Assignment Class Activity 3/29	due by 11:59pm
Fri Apr 8, 2022	Assignment Class Activity 4/7	due by 11:59pm
Mon Apr 11, 2022	Assignment Week 13: Video Notes and Problems	due by 11:59pm
Wed Apr 13, 2022	Assignment Class Activity 4/12	due by 11:59pm
Mon Apr 18, 2022	Assignment Week 14: Video Notes and Problems	due by 11:59pm
Wed Apr 20, 2022	Assignment Class Activity 4/19	due by 11:59pm
Fri Apr 22, 2022	Assignment Class Activity 4/21	due by 11:59pm
Mon Apr 25, 2022	Assignment Week 15: Video Notes and Problems	due by 11:59pm
Thu Jan 18, 2024	Assignment Homework 1: 1.1, 1.2	due by 1:30pm
Thu Jan 25, 2024	Assignment Homework 2: 1.3, 1.4, 1.5	due by 1:30pm
Thu Feb 1, 2024	Assignment Homework 3: 1.6, 2.1, 2.2	due by 1:30pm
Thu Feb 8, 2024	Assignment Homework 4: 2.3, 2.4, 2.5	due by 1:30pm
Tue Feb 13, 2024	Assignment Exam 1	due by 1:30pm
Thu Feb 15, 2024	Assignment Homework 5: 2.8	due by 1:30pm
Thu Feb 22, 2024	Assignment Homework 6: 3.1, 3.2	due by 1:30pm
Thu Feb 29, 2024	Assignment Homework 7: 3.3, 3.4, 3.5	due by 1:30pm

Date	Details	Due
Thu Mar 14, 2024	Assignment Homework 8: 3.6, 4.1, 4.2	due by 1:30pm
Thu Mar 21, 2024	Assignment Homework 9: 4.3, 4.4, 5.1	due by 1:30pm
Tue Apr 2, 2024	Assignment Homework 10: 5.2, 5.3, 5.4	due by 1:30pm
Thu Apr 4, 2024	Assignment Exam 2	due by 1:30pm
	Assignment Homework 11: 5.5, 5.6	due by 1:30pm
Thu Apr 18, 2024	Assignment Homework 13: 6.1, 6.2, 6.3, 6.4	due by 1:30pm
Thu Apr 25, 2024	Assignment Homework 14: 6.5, 7.1, 7.2	due by 1:30pm
Mon Apr 29, 2024	Assignment Homework 15: Prepare for Final Exam	due by 1:30pm
Tue Apr 30, 2024	Assignment FINAL EXAM	due by 1:30pm
	Assignment Final Exam	

Monday	Tuesday	Wednesday	Thursday	Friday
8-Jan	9-Jan Algebra Review Section 2.1	10-Jan	11-Jan Sections 2.1 and 2.2	12-Jan
15-Jan MLK Day	16-Jan Section 2.3 and 2.4	17-Jan	18-Jan Section 2.4 and 2.5 Homework 1 Due	19-Jan
22-Jan	23-Jan Section 2.6	24-Jan	25-Jan Section 2.7 Homework 2 Due	26-Jan
29-Jan	30-Jan Section 3.1	31-Jan	1-Feb Section 3.2 Homework 3 Due	2-Feb
5-Feb	6-Feb Section 3.3	7-Feb	8-Feb Section 3.4 Homework 4 Due	9-Feb
12-Feb	13-Feb Review for Exam 1	14-Feb	15-Feb Exam 1 Homework 5 Due	16-Feb
19-Feb	20-Feb Sections 3.6 and 6.1	21-Feb	22-Feb Sections 6.1 and 6.2 Homework 6 Due	23-Feb
26-Feb	27-Feb Section 6.3	28-Feb	29-Feb Section 6.4 Homework 7 Due	1-Mar
4-Mar Spring Break	5-Mar Spring Break	6-Mar Spring Break	7-Mar Spring Break	8-Mar Spring Break
11-Mar	12-Mar Section 4.1	13-Mar	14-Mar Section 4.2 Homework 8 Due	15-Mar
18-Mar	19-Mar Sections 4.3 and 4.4	20-Mar	21-Mar Sections 4.4 and 5.1 Homework 9 Due	22-Mar
25-Mar 7.4 Review	26-Mar Sections 5.2	27-Mar	28-Mar Easter Break	29-Mar Easter Break
1-Apr Easter Break	2-Apr Section 4.8 and 5.3 Homework 10 Due	3-Apr	4-Apr Sections 5.3 and 5.4 Homework 11 Due	5-Apr
8-Apr	9-Apr Review for Exam II	10-Apr	11-Apr Exam 2 Homework 12 Due	12-Apr
15-Apr	16-Apr Sections 4.5 and 4.6	17-Apr	18-Apr Sections 4.6 and 4.7 Homework 13 Due	19-Apr
22-Apr	23-Apr Section 4.9	24-Apr	25-Apr Final Review Homework 14 Due	26-Apr
29-Apr	30-Apr	1-May	2-May 7:30-10:00 PM Final Exam Homework 15 Due	3-May