


## Syllabus for Calculus with Applications

	Mathematics, Information, and Computer Sciences College of Natural and Social Sciences MTH1044-1 Calculus and its Applications ( <b>4 units</b> ) Pre – requisites: MTH1033
Spring 2021: March 1 – June 11	

Meeting days: MWF	Instructor: Jesús Jiménez-Reyes, Professor of Mathematics	
Meeting times: 10:55 am – 12:05 am	Phone: 619-849-2634	
Meeting location: Online	Email: jjimenez@pointloma.edu	
Final Exam	Office hours:	MW 1:00 pm – 4:00 pm
6/11/21 (Friday): 10:30 am – 1:00 pm		TR 9:30 am – 11:30 am

**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 becomes an expression of faith. Being of Wesleyan heritage, we aspire 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**

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

**FOUNDATIONAL EXPLORATION**

This is a PLNU Foundational Explorations course (a general education course).

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.

**FOUNDATIONAL EXPLORATIONS LEARNING OUTCOMES**

- 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

**COURSE 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

**REQUIRED TEXTS AND RECOMMENDED STUDY RESOURCES**

Calculus and its Applications, 14<sup>th</sup> Edition (Electronic Copy via MyLab and Mastering)

Goldstein – Lay – Schneider – Asmar

PEARSON [Access Code Required](#)

**COURSE CREDIT HOURS 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 4-unit class delivered over 15 weeks. Specific details about how the class meets the credit hour is provided below.

Online Quizzes	15.00
Online Homework	25.00
Written Group Homework	10:00
Reading Text	15.00
Watching Videos	20.00
Zoom Meetings	15.00
Peer Reviewed Discussions	15.00
Midterms	3.25
Final Exam	2:50
TOTAL	120.75

**GRADE COMPONENTS**

The grade components are written homework, written tests, online homework, online quizzes, discussions, class attendance and participation, partial exams, and the final examination.

**OTHER FACTORS THAT AFFECT GRADES**

- **Online Assignments:** Online assignments (online homework and quizzes) will be completed in MyLab and Mastering website. This will be available by purchasing an access code.
- **Collaborative Activities:** This will be peer-reviewed discussions using CANVAS.
- **Group Written Assignments:** Assignments collected must be prepared in a style suitable for grading. The following guidelines are used to determine credit:
  - the organization must be easy to follow
  - the work must be legible
  - complete solutions must be written for problems (not just answers); answers must be clearly marked
  - use complete sentences to answer questions
- **Tests and Final Examination:** 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 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. This instructor does not intend to accept excuses such as poor communication with parents, benefactors, surf team sponsors and/or travel agents. 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. 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. The student must contact each professor in order to work out an alternate time for one of those examinations. Department chairs/school deans and college deans need not be involved in the process of making this accommodation. Such accommodations and the negotiations necessary to arrange them must be completed at least four weeks prior to the official time of the final examination.

- **Late work:** All assignments are to be submitted/turned in by the beginning of the class session when they are due—including assignments posted in Canvas. Late work need not be accepted. Work accepted late may be assessed a penalty. Make-up tests will be given only by prior arrangement with the instructor for reasons of documented emergency.
- **Incomplete grade:** Incompletes will only be assigned in extremely unusual circumstances. You may request a grade of I (incomplete) only if you are having a passing grade and at least 70% of the course work is completed.

### GRADING SCALE

A passing grade requires getting at least 60% in one of the two tests or on the final exam. Grades are based on the number of points accumulated throughout the course. Approximate minimal percentages required to obtain a given grade are:

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]

### GRADING DISTRIBUTION

Grade Distribution	
Three Tests at 15% each	45%
Final Exam	30%
Online Homework	8%
Quizzes	5%
Online Pair Discussion	5%
Group Written Homework	5%
Zoom Attendance	2%
Total	100%

### 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.

### 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.

**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 Policies](#) for definitions of kinds of academic dishonesty and for further policy information.

**PLNU ACADEMIC ACCOMMODATIONS POLICY**

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](mailto: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.

**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.

**PLNU ATTENDANCE AND PARTICIPATION POLICY**

Students taking online courses are expected to attend each week of the course. Attendance is defined as participating in an academic activity within the online classroom which includes posting in a graded activity in the course. (Note: Logging into the course does not qualify as participation and will not be counted as meeting the attendance requirement.)

Students who do not attend at least once in any 3 consecutive days will be issued an attendance warning. Students who do not attend at least once in any 7 consecutive days will be dropped from the course retroactive to the last date of recorded attendance.

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.

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.

### 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.

### 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 students have questions, a desire to meet with the chaplain or have prayer requests you can contact the [Office of Spiritual Development](#)

### COURSE PHILOSOPHY

The general method of the course is to involve students in "dynamic processes of inquiry and exploration, logical reasoning, making and testing conjectures, and investigating implications of conclusions" [Catalog]. Specifically, the focus is on the processes and tools of quantitative problem solving. Learning what they are and developing ability to use them.

"Today's world is more mathematical than yesterday's, and tomorrow's world will be more mathematical than today's."

"...mathematics...serves as a key to opportunity and careers"

"To participate rationally in a world where discussions about everything from finance to the environment, from personal health to politics, are increasingly informed by mathematics, one must understand mathematical methods and concepts, their assumptions and implications."

### COURSE APPROACH

The ability to solve problems requires resourcefulness, flexibility, and efficiency in dealing with new obstacles. Research on teaching and learning problem solving suggests that certain factors are critical to successful problem solving, including resources, heuristics, control, and belief systems.

- Resources refer to whatever information problem solvers understand (or misunderstand) that might be brought to bear on a problem.
- Heuristic refers to strategies and techniques problem solvers have (or lack) for making progress when working on non-routine problems.
- Control refers to the way problem solvers use (or fail to use) the information at their disposal. Belief systems refer to the problem solver's "world view" of the problem domain, which determines the ways they use the knowledge in the first three categories.

**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.

**THE FINAL EXAM IS A COMPREHENSIVE EXAMINATION. DATE: 6/11/2021 (Friday) from 10:30 am – 1:00 pm**

Successful completion of this class requires taking the final examination on its scheduled day.

The final exam date, time and place 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.

**GROUP HOMEWORK PROBLEMS**

The problems will be posted on CANVAS in the section Group Written Problems.

The solutions to these problems are to be written up on paper and uploaded to CANVAS on or before the due date.

Comments on homework:

1. There will be THREE problems to be done
2. 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 except by prior arrangement or with a documented emergency.
3. Please be sure that you submit all the problems
4. Homework will be scored on a combination of completeness and correctness. All work necessary to complete a problem must be shown to earn credit.
5. Start working on your homework early. These problems are more difficult than the online problems and meant to be done a little at a time over the course of a few days.
6. 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.

## DAILY SCHEDULE

Week	Day	Readings & Videos	Zoom	Online HW	Quizzes	Reviewed Discussion	Group Written HW	Exams	Due Date
1	Monday	1.1 – 1.3	All	Introduction					3/1/21
1	Wednesday		All						3/3/21
1	Friday		All		Quiz	Post to Discussion	Group Written HW		3/5/21
2	Monday	1.6 – 1.8	Group Mondays			Coment to Discussion			3/8/21
2	Wednesday		Group Wednesdays						3/10/21
2	Friday		All		Quiz	Post to Discussion	Group Written HW		3/12/21
3	Monday	2.1 – 2.3	Group Mondays			Coment to Discussion			3/15/21
3	Wednesday		Group Wednesdays						3/17/21
3	Friday		All		Quiz	Post to Discussion	Group Written HW		3/19/21
4	Monday	2.5 – 2.6	Group Mondays			Coment to Discussion			3/22/21
4	Wednesday		Group Wednesdays						3/24/21
4	Friday		All		Quiz	Post to Discussion	Group Written HW	Exam 1	3/26/21
5	Monday	3.1 – 3.3	Group Mondays			Coment to Discussion			3/29/21
5	Wednesday		Group Wednesdays						3/31/21
5	Friday		All		Quiz	Post to Discussion	Group Written HW		4/2/21
6	Monday	4.1 – 4.5	Group Mondays			Coment to Discussion			4/5/21
6	Wednesday		Group Wednesdays						4/7/21
6	Friday		All		Quiz	Post to Discussion	Group Written HW		4/9/21
7	Monday	5.1	Group Mondays			Coment to Discussion			4/12/21
7	Wednesday		Group Wednesdays						4/14/21
7	Friday		All		Quiz	Post to Discussion	Group Written HW		4/16/21
8	Monday	8.1 – 8.4	Group Mondays			Coment to Discussion			4/19/21
8	Wednesday		Group Wednesdays						4/21/21
8	Friday		All		Quiz	Post to Discussion	Group Written HW		4/23/21
9	Monday	6.1 – 6.3	Group Mondays			Coment to Discussion			4/26/21
9	Wednesday		Group Wednesdays						4/28/21
9	Friday		All		Quiz	Post to Discussion	Group Written HW	Exam 2	4/30/21
10	Monday	6.4 – 6.5	Group Mondays			Coment to Discussion			5/3/21
10	Wednesday		Group Wednesdays						5/5/21
10	Friday		All		Quiz	Post to Discussion	Group Written HW		5/7/21
11	Monday	9.1 – 9.2	Group Mondays			Coment to Discussion			5/10/21
11	Wednesday		Group Wednesdays						5/12/21
11	Friday		All		Quiz	Post to Discussion	Group Written HW		5/14/21
12	Monday	9.3 – 9.5	Group Mondays			Coment to Discussion			5/17/21
12	Wednesday		Group Wednesdays						5/19/21
12	Friday		All		Quiz	Post to Discussion	Group Written HW	Exam 3	5/21/21
13	Monday	11.1 – 11.2	Group Mondays			Coment to Discussion			5/24/21
13	Wednesday		Group Wednesdays						5/26/21
13	Friday		All		Quiz	Post to Discussion	Group Written HW		5/28/21
14	Monday	11.3	Group Mondays			Coment to Discussion			5/31/21
14	Wednesday		Group Wednesdays						6/2/21
14	Friday		All		Quiz	Post to Discussion	Group Written HW		6/4/21
15	Monday		Group Mondays						6/7/21
15	Wednesday		Group Wednesdays					Final Exam 7:30 am	6/9/21
15	Friday		All						6/11/21