

Syllabus for Differential Equations

	Mathematics, Information, and Computer Sciences College of Natural and Social Sciences MTH3033-1 Differential Equations 3 Units Pre – requisites: MTH2074 with a grade of C- or higher.
Spring 2024: January 8 – May 3	

MWF 12:15 – 1:10 pm	Instructor: Jesús Jiménez-Reyes, Professor of Mathematics	
Meeting location: RS 265		
	Email: jjimenez@pointloma.edu	
Final Exam	Office hours: RS234	MWF 9:00 – 11:30 am
May 3 rd (Friday) 10:30 am – 1:00 pm		

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

Ordinary differential equations, solutions by analytical and numerical methods in the context of real-world applications. A brief introduction to partial differential equations and Fourier series.

COURSE LEARNING OUTCOMES

- Students will be able to apply their mathematical knowledge and critical thinking to solve problems.
- Students will be able to apply their technical knowledge to solve problems.

REQUIRED TEXTS AND RECOMMENDED STUDY RESOURCES

Textbook: Fundamentals of Differential Equations, Ninth Edition

Authors: Nagle, Saff and Snider.

Publisher: PEARSON

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 3-unit class delivered over 15 weeks. Specific details about how the class meets the credit hour is provided below.

Written Homework	55.00
Reading Text	30.00
Class meetings	35.00
Midterms	2.00
Final Exam	2.50
TOTAL	124.50

GRADE COMPONENTS

The grade components are attendance, written homework, written tests, partial exams, and the final examination.

OTHER FACTORS THAT AFFECT GRADES

- **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	
Two Tests at 20% each	40%
Final Exam	30%
Written Homework	25%
Attendance	5%
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.

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.

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

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.

PLNU ATTENDANCE AND PARTICIPATION 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.

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](#).

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.

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.

OFFICE OF STUDENT LIFE AND FORMATION

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 Life and Formation](#).

SEXUAL MISCONDUCT AND DISCRIMINATION

Point Loma Nazarene University faculty are committed to helping create a safe learning environment for all students. 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 help and support are available through the Title IX Office at <http://pointloma.edu/Title-IX>. Please be aware that under Title IX of the Education Amendments of 1972, it is 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 <mailto:counselingservices@pointloma.edu> or find a list of campus pastors at <http://pointloma.edu/Title-IX>.

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. (May 3rd (Friday), 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.

WRITTEN HOMEWORK PROBLEMS

These assignments and due dates are posted on CANVAS and are to be written up on paper. They must turn in at the start of class on the due date.

Comments on homework:

1. This is the minimum amount of homework that is required but you may need to do several odd numbered problems to make sure you get the answer in the textbook.
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 your homework is stapled together and the problems are in order.
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 difficult 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	Date	Section
1	Monday	1/8/24	1.1, 1.2
1	Wednesday	1/10/24	1.3
1	Friday	1/12/24	1.4
2	Monday	1/15/24	MLK Day (No Classes)
2	Wednesday	1/17/24	2.2
2	Friday	1/19/24	2.3
3	Monday	1/22/24	2.4
3	Wednesday	1/24/24	2.4, 2.6
3	Friday	1/26/24	2.6
4	Monday	1/29/24	3.2
4	Wednesday	1/31/24	3.4
4	Friday	2/2/24	3.6
5	Monday	2/5/24	4.1
5	Wednesday	2/7/24	4.2
5	Friday	2/9/24	4.3
6	Monday	2/12/24	4.4
6	Wednesday	2/14/24	Exam 1
6	Friday	2/16/24	4.4, 4.6
7	Monday	2/19/24	4.6, 4.7
7	Wednesday	2/21/24	4.7
7	Friday	2/23/24	5.1, 5.2
8	Monday	2/26/24	5.2, 5.4
8	Wednesday	2/28/24	5.4
8	Friday	3/1/24	catch up
9	Monday	3/4/24	Spring Break
9	Wednesday	3/6/24	Spring Break
9	Friday	3/8/24	Spring Break
10	Monday	3/11/24	7.1, 7.2
10	Wednesday	3/13/24	7.3
10	Friday	3/15/24	7.4
11	Monday	3/18/24	7.5
11	Wednesday	3/20/24	7.6
11	Friday	3/22/24	7.7
12	Monday	3/25/24	7.8
12	Wednesday	3/27/24	Exam 2
12	Friday	3/29/24	Easter Recess
13	Monday	4/1/24	Easter Recess
13	Wednesday	4/3/24	8.2
13	Friday	4/5/24	8.3
14	Monday	4/8/24	8.5
14	Wednesday	4/10/24	10.1
14	Friday	4/12/24	10.2
15	Monday	4/15/24	10.2
15	Wednesday	4/17/24	10.3
15	Friday	4/19/24	10.3
16	Monday	4/22/24	10.4
16	Wednesday	4/24/24	10.4, 10.5
16	Friday	4/26/24	10.5
17	Monday	4/29/24	
17	Wednesday	5/1/24	
17	Friday	5/3/24	Final Exam 10:30 am