

Syllabus

 <p>POINT LOMA NAZARENE UNIVERSITY</p>	<p>Department/School Name: Mathematical, Information and Computer Sciences</p> <p>Course Number and Name: MTH3033 Differential Equations</p> <p>Number of Units: 3</p> <p>Class Time: MW 12:05-1:20</p> <p>Class Location: RS295</p>
<p>Spring 2022</p>	

<p>Instructor: Dr. Katie Rainey</p>
<p>Phone: 619.849.2219</p>
<p>Email: krainey@pointloma.edu</p>
<p>Office: RS228</p>
<p>Office hours: By Appointment</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.

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

MTH3033 Differential Equations (3)

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.

Prerequisite: MTH2074

COURSE LEARNING OUTCOMES

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

REQUIRED TEXTS AND RECOMMENDED STUDY RESOURCES

Fundamentals of Differential Equations, Ninth Edition, by Nagle, Saff and Snider.

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:** Homework will be assigned every week. The previous week's homework will be due Monday night, so you can ask questions during class on Monday. *Doing all of the assigned homework before the next class will almost certainly ensure that you successfully master the course material. The exams will be like the homework; there should be no surprises.* You must be persistent in solving homework problems; when you need help, ask me, fellow classmates, other friends, the internet, or your favorite MICS professor, but be sure to keep up with the pace of the class.
- **Quiz Explanations.** Quizzes will be given at the end of class most Wednesdays. You will grade the quiz yourself *and* write a detailed explanation of the problem (as described in the posted assignment) to be turned in the following Friday before midnight. This is meant to make you take a closer look at the course material, think about problems in the context of the course, and to

work on your technical writing skills. The quiz explanation requirements may shift throughout the course at the instructor's discretion.

- **Attendance.** Attendance points will be given during each class meeting. In the case of an excused absence or when the instructor cancels class, you must watch the assigned videos for that meeting and turn in written notes in order to receive attendance points.
- **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. 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 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.
- **Late work.** Up to a maximum of one homework assignment and one quiz will be accepted up to 3 days late provided that consent is received from the professor before it is due. Otherwise, homework assignments and quizzes that are submitted late without prior consent will be given half credit. If more than half of the homework assignments are submitted on time, then the lowest homework score will be dropped from the calculations of the homework grade.
- 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
Midterm Exam	25
Final Exam	30
Homework	20
Quizzes	20
Attendance and Video Notes	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 the Midterm Exam 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	

REMOTE CLASSES

Class may occasionally be required to meet on Zoom. Keep the following in mind for remote attendance.

- Show up to Zoom on time.
- Turn on camera and make sure your camera is turned on for the entire length of the class.
 - If you need to have camera turned off an email **MUST** be sent to me prior to class otherwise I will consider this an unexcused absence.
 - Excused reasons for intermittent camera being off: need to use the restroom, may need to protect roommate
- Participate with professor and peers by unmuting OR using the chat.
- Make sure you are in a quiet space (when possible) free of distractions.
 - Students will not get participation points if they are driving in a car, at work etc.
 - You should reserve this class time just like you would if you were face to face.
- Once PLNU returns to face-to-face learning, unless you have an EAC accommodation (i.e., Isolation/Quarantine, Concussion, Remote Accommodation), you may not participate via remote learning.

- Please keep in mind that PLNU's absence policy states that your absences may not surpass 20% of our class sessions.

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 \(https://www.pointloma.edu/offices/office-institutional-effectiveness-research/disclosures\)](https://www.pointloma.edu/offices/office-institutional-effectiveness-research/disclosures) 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.

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 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](http://catalog.pointloma.edu/content.php?) [.\(http://catalog.pointloma.edu/content.php?](http://catalog.pointloma.edu/content.php?)

[catoid=18&navoid=1278](#)) 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 ([Links to an external site.](#)) [_\(https://mail.google.com/mail/?view=cm&fs=1&tf=1&to=EAC@pointloma.edu\)](https://mail.google.com/mail/?view=cm&fs=1&tf=1&to=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 [Academic Policies](#) (<http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278>) for further information about class attendance.

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](#) [_\(https://www.pointloma.edu/offices/spiritual-development\)](https://www.pointloma.edu/offices/spiritual-development)

Subject to change	Last updated: Fri Jan 28	
Week 1	Tue Jan 11	Wed Jan 12
Intro, 1.1, 1.2, 1.3	REMOTE	REMOTE
Week 2	Mon Jan 17	Wed Jan 19
2.2, 2.3	NO CLASS	
Week 3	Mon Jan 24	Wed Jan 26
2.3, 2.4, 2.6		
Week 4	Mon Jan 31	Wed Feb 2
3.2, 3.4, 1.4, 3.6		
Week 5	Mon Feb 7	Wed Feb 9
4.1, 4.2, 4.3		
Week 6	Mon Feb 14	Wed Feb 16
4.4, 4.5	NO CLASS	
Week 7	Mon Feb 21	Wed Feb 23
4.6, 4.7		
Week 8	Mon Feb 28	Wed Mar 2
Midterm review, 5.1, 5.2		MIDTERM
Spring Break	Mon Mar 7	Wed Mar 9
	NO CLASS	NO CLASS
Week 9	Mon Mar 14	Wed Mar 16
5.4, 5.5, 7.1, 7.2		
Week 10	Mon Mar 21	Wed Mar 23
7.3, 7.4, 7.5		
Week 11	Mon Mar 28	Wed Mar 30
7.5, 7.6, 7.7		
Week 12	Mon Apr 4	Wed Apr 6
7.7, 7.8, 8.2		
Week 13	Mon Apr 11	Wed Apr 13
8.3, 8.5, 10.1, 10.2		
Week 14	Mon Apr 18	Wed Apr 20
10.3, 10.4	NO CLASS	
Week 15	Mon Apr 25	Wed Apr 27
10.5, special topics, final review		
		Wed May 4
		FINAL EXAM