

# POINT LOMA NAZARENE UNIVERSITY

## SYLLABUS MTH1044—2: CALCULUS WITH APPLICATIONS

SPRING 2020

### INSTRUCTOR INFORMATION

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*Office Hours:* M and W (1:30 pm — 3:30 pm) T and H (8:30 am — 11:30 am)

### CLASS INFORMATION

*Course Units:* 4 units

*Course Dates:* January 14, 2020 — May 1, 2020

*Time:* Monday, Wednesday and Friday (10:55 am — 12:00 pm)

*Classroom:* RLC 108

*Textbook:* Calculus & its Applications. Goldstein, Lay, Schneider, Asmar. 14 Edition. *Publisher:* PEARSON

*Prerequisite:* MTH 1033 (or equivalent).

### 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

Differential and integral calculus of the elementary functions of one variable. Limits, continuity, derivatives, integrals and applications. *Prerequisites:* MTH1033 or equivalent.

### GENERAL EDUCATION

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.

### COURSE OBJECTIVES

- 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.

## FINANCIAL LITERACY

A portion of PLNU's mathematics general education is focused on financial literacy. Part of this class will examine issues related to borrowing and saving money, budgeting and the use of credit cards using some of the concepts introduced in calculus.

## 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 [Class Attendance](#) Policies in the Academic Catalog.

## 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.

## PARTIAL EXAMS

Partial Exams 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 by me 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. I do not intend to accept excuses such as poor communication with parents, benefactors, sport team sponsors and/or travel agents.

## LATE WORK AND INCOMPLETES

All assignments are to be submitted/turned in by the beginning of the class session when they are due – including assignments posted in Canvas. An **Incomplete Grade** will only be assigned in extremely unusual circumstances.

## FINAL EXAMINATION POLICY, DATE AND TIME

The Final Exam is **COMPREHENSIVE**. Successful completion of this class requires taking the final examination on its scheduled day.

The final exam date and time is: **May 4, 2020. (Monday) 7:30 am to 10:00 am.**

The final examination date and time is set by the university. If you have to take three examinations on the same date during finals week then I will try to accommodate a date change. **Otherwise, no requests for early examinations or alternative dates will be approved.**

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.

## ASSIGNMENT DISTRIBUTION

|                 |      |
|-----------------|------|
| Weekly Homework | 25 % |
| Exam 1          | 15 % |
| Exam 2          | 15 % |
| Exam 3          | 15 % |
| Final Exam      | 30 % |

## GRADE SCALE

| Letter Grades |                |                |                |  |
|---------------|----------------|----------------|----------------|--|
|               | B+ (87.5, 90]  | C+ (77.5, 80]  | D+ (67.5, 70]  |  |
| A (92.5, 100] | B (82.5, 87.5] | C (72.5, 77.5] | D (62.5, 67.5] |  |
| A- (90, 92.5] | B- (80, 82.5]  | C- (70, 72.5]  | D- (60, 62.5]  |  |
|               |                |                | F [0, 60]      |  |

## 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.

See [Academic Accommodations](#) Policies in the Academic Catalog.

## 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 Honesty](#) Policies in the Academic Catalog for definitions of kinds of academic dishonesty and for further policy information.

## ACADEMIC BEHAVIOR POLICY

Both faculty and students at Point Loma Nazarene University have the right to expect a safe and ordered environment for learning. Any student behavior that is disruptive or threatening is a serious affront to Point Loma Nazarene University as a learning community. Students who fail to adhere to appropriate academic behavioral standards may be subject to discipline. Although faculty members communicate general student expectations in their syllabi and disruptive student conduct is already addressed in the Undergraduate Student Handbook, the purpose of this policy is to clarify what constitutes disruptive behavior in the academic setting and what actions faculty and relevant administrative offices may take in response to such disruptive student behavior.

“Disruption,” as applied to the academic setting, means classroom, instructor or classmate-related student behavior that a reasonable faculty member would view as interfering with or deviating from normal classroom, class-related, or other faculty-student activity (advising, co-curricular involvement, etc.). Faculty members are encouraged to communicate positive

behavior expectations at the first–class session and to include them in course syllabi. Examples of disruptive classroom or class-related behavior include, but are not limited to:

- persistent speaking without being recognized or interrupting the instructor or other speakers;
- overt inattentiveness (sleeping or reading the newspaper in class);
- inordinate or inappropriate demands for instructor or classroom time or attention;
- unauthorized use of cell phone or computer;
- behavior that distracts the class from the subject matter or discussion;
- unwanted contact with a classmate in person, via social media or other means;
- inappropriate public displays of affection;
- refusal to comply with reasonable instructor direction; and/or
- invasion of personal space, physical threats, harassing behavior or personal insults.

The above types of behavior are prohibited in the classroom, course-related off-campus activities and class-related interactions between students and faculty members or academic administrators. Incidents which involve both academic and non-academic behavior may result in responses coordinated by the Vice Provost for Academic Administration (VPAA) and the Vice President for Student Development or the Dean of Students.

Civil and polite expression of disagreement with the course instructor, during times when the instructor permits discussion, is not in itself disruptive behavior and is not prohibited.

All students, including students with disabilities, are required to comply with this Academic Behavior Policy and related policies in their respective Student Handbooks, Catalogs and/or faculty syllabi. Students with disabilities, however, may be entitled to receive academic adjustments, modifications or auxiliary aids and services as described below under the [Academic Accommodations](#) section.

## **RESPONSE PROCEDURE**

The following response procedure is recommended to faculty who witness or experience disruptive behavior, either in the classroom or in contact with an enrolled student outside the classroom. Depending on its severity, disruptive behavior could result in any of the following responses:

1. Verbal and/or written request to stop behavior and warning of potential consequences.
2. Exclusion from the current class period/activity.
3. E-mailed report to Vice Provost for Academic Administration and/or Vice President for Student Development which, may further result in:
  - Filing of report and no further action.
  - Student meeting with VPAA, the Dean of Students and/or the Vice President for Student Development to develop and sign classroom behavior and growth plan detailing appropriate behaviors and consequences for failure to comply.
4. Depending on the frequency and severity of the student behavior, consequences may also include without limitation permanent exclusion from a specific class, suspension, expulsion or administrative withdrawal from the university.

If events occur in classes or off-campus activities after university business hours, faculty should call Department of Public Safety and ask to speak to the highest-ranking officer who will notify administrative personnel.

See [Academic Behavior](#) Policies in the Academic Catalog.

## **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 **four–unit** class delivered over 15 weeks. Specific details about how the class meets the credit hour requirements can be provided upon request.

## CELL PHONES

Turn off any cell phone or device that make noise while you are in class. Also, do not text or work on other classes while in class – to do so is disrespectful to me and your classmates.

## GENERAL ADVICE

The key to success in this class is to attend lectures regularly and do your homework. You learn mathematics by doing it yourself. You should expect to spend approximately **eight hours** (per week) outside of class working on homework and going over concepts. When doing your homework, please note it is normal to not be able to do every problem correctly on the first attempt. Do not be discouraged, instead, seek help.

## SOURCES OF HELP

- Me. If you have questions, ask me. Office Hours: M and W (1:30 pm — 3:30 pm) T and H (8:30 am — 11:30 am)
- FREE TUTORING – Math Learning Center, Rohr Science – 270. Hours are posted on the door.
- Other classmates. Form study groups! Work together!

## DAILY SCHEDULE AND HOMEWORK

Daily Schedule and Homework are appended below. 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. however, some lowest scores homework will be dropped. Please be sure that your homework is stapled together and the problems are in order. Homework will be scored on a combination of completeness and correctness. A random selection (the same for all people) of the problems will be graded on each homework assignment.

## DAILY SCHEDULE

| Week | Day       | Date    | Activity                        |
|------|-----------|---------|---------------------------------|
| 1    | Tuesday   | 1/14/20 | 1.1 and 1.2                     |
| 1    | Wednesday | 1/15/20 | 1.3 and 1.4                     |
| 1    | Friday    | 1/17/20 | No Class (Mathematics Meeting)  |
| 2    | Monday    | 1/20/20 | MLK (No Class)                  |
| 2    | Wednesday | 1/22/20 | 1.5 and 1.6                     |
| 2    | Friday    | 1/24/20 | 1.7 and 1.8                     |
| 3    | Monday    | 1/27/20 | 2.1 and 2.2                     |
| 3    | Wednesday | 1/29/20 | 2.3                             |
| 3    | Friday    | 1/31/20 | 2.5                             |
| 4    | Monday    | 2/3/20  | 2.6                             |
| 4    | Wednesday | 2/5/20  | Exam 1                          |
| 4    | Friday    | 2/7/20  | 3.1                             |
| 5    | Monday    | 2/10/20 | 3.2                             |
| 5    | Wednesday | 2/12/20 | 3.3                             |
| 5    | Friday    | 2/14/20 | 4.1 and 4.2                     |
| 6    | Monday    | 2/17/20 | 4.3 and 4.4                     |
| 6    | Wednesday | 2/19/20 | 4.4 and 4.5                     |
| 6    | Friday    | 2/21/20 | 5.1 and 5.2                     |
| 7    | Monday    | 2/24/20 | 5.2                             |
| 7    | Wednesday | 2/26/20 | 5.4                             |
| 7    | Friday    | 2/28/20 | 6.1                             |
| 8    | Monday    | 3/2/20  | 6.2                             |
| 8    | Wednesday | 3/4/20  | Exam 2                          |
| 8    | Friday    | 3/6/20  | 6.3                             |
| 9    | Monday    | 3/9/20  | Spring Break                    |
| 9    | Wednesday | 3/11/20 | Spring Break                    |
| 9    | Friday    | 3/13/20 | Spring Break                    |
| 10   | Monday    | 3/16/20 | 6.3                             |
| 10   | Wednesday | 3/18/20 | 6.4                             |
| 10   | Friday    | 3/20/20 | 6.4                             |
| 11   | Monday    | 3/23/20 | 8.1 and 8.2                     |
| 11   | Wednesday | 3/25/20 | 8.3 and 8.4                     |
| 11   | Friday    | 3/27/20 | 9.1                             |
| 12   | Monday    | 3/30/20 | 9.2                             |
| 12   | Wednesday | 4/1/20  | 9.2                             |
| 12   | Friday    | 4/3/20  | 9.3                             |
| 13   | Monday    | 4/6/20  | 9.4                             |
| 13   | Wednesday | 4/8/20  | Exam 3                          |
| 13   | Friday    | 4/10/20 | Ester Break                     |
| 14   | Monday    | 4/13/20 | Ester Break                     |
| 14   | Wednesday | 4/15/20 | 11.1 and 11.2                   |
| 14   | Friday    | 4/17/20 | 11.3                            |
| 15   | Monday    | 4/20/20 | 11.5                            |
| 15   | Wednesday | 4/22/20 | Financial Mathematics           |
| 15   | Friday    | 4/24/20 | Financial Mathematics           |
| 16   | Monday    | 4/27/20 | Financial Mathematics           |
| 16   | Wednesday | 4/29/20 | Catch up                        |
| 16   | Friday    | 5/1/20  | Catch up                        |
| 17   | Monday    | 5/4/20  | Final Exam (7:30 am — 10:00 am) |
| 17   | Wednesday | 5/6/20  |                                 |
| 17   | Friday    | 5/8/20  |                                 |

## HOMEWORK

| Section | Problems   | Due Date |
|---------|--|----------|
| 1.1     | 8, 12, 16, 20, 24, 28, 31, 47, 59, 60                                    | 1/17/20  |
| 1.2     | 2, 4, 15, 16, 17, 18, 23, 24, 38   | 1/17/20  |
| 1.3     | 6, 9, 11, 12, 16, 17, 22, 24, 25, 28, 30, 33, 36, 49, 50, 55, 64, 71, 72 | 1/17/20  |
| 1.4     | 2, 4, 6, 7, 10, 11, 14, 17, 22, 23, 29, 32, 34, 37, 40, 43, 45           | 1/24/20  |
| 1.5     | 1, 2, 3, 4, 5, 6, 13, 16, 18, 29, 31                                     | 1/24/20  |
| 1.6     | 1, 4, 7, 8, 11, 16, 21, 24, 29, 41, 49, 50, 51, 52                       | 1/24/20  |
| 1.7     | 2, 4, 7, 12, 13, 18, 21, 25, 28, 32, 34, 36                              | 1/24/20  |
| 1.8     | 2, 3, 6, 10, 11, 12, 15, 18, 21, 22, 31                                  | 1/31/20  |
| 2.1     | 5, 8, 11, 17, 18, 20, 21, 22, 27, 28, 33, 34                             | 1/31/20  |
| 2.2     | 1, 2, 3, 4, 7, 8, 10, 11, 19, 24, 25, 26, 37, 44                         | 1/31/20  |
| 2.3     | 2, 4, 7, 17, 20, 23, 26, 27, 35, 38, 42, 43, 44                          | 1/31/20  |
| 2.5     | 1, 4, 6, 10, 11, 15, 23, 24, 28  | 2/7/20   |
| 2.6     | 23, 30   | 2/7/20   |
| 3.1     | 1, 2, 3, 4, 8, 10, 11, 19, 26, 27, 32, 39, 42, 45, 52, 53, 60, 61, 68    | 2/14/20  |
| 3.2     | 3, 4, 5, 10, 12, 13, 17, 20, 23, 24, 30, 31, 37, 38, 50, 55              | 2/14/20  |
| 3.3     | 2, 3, 5, 10, 20, 21, 27, 31, 32, 43, 44                                  | 2/14/20  |
| 4.1     | 10, 11, 12, 15, 19, 20, 21, 29, 30, 40, 41                               | 2/14/20  |
| 4.2     | 2, 5, 11, 14, 20, 26, 29, 31, 44   | 2/21/20  |
| 4.3     | 5, 6, 13, 15, 19, 21, 22, 26, 27, 32, 36, 37, 38, 40                     | 2/21/20  |
| 4.4     | 1, 2, 3, 4, 5, 6, 11, 12, 13, 16, 23, 27, 29, 30, 34, 35, 38, 40, 42, 49 | 2/21/20  |
| 4.5     | 7, 8, 11, 12, 13, 19, 21, 23, 25, 31, 33                                 | 2/21/20  |
| 5.1     | 1, 4, 5, 6, 12, 13, 14, 15, 20, 24, 25, 26, 31, 36, 37                   | 2/28/20  |
| 5.2     | 1, 4, 5, 7, 8, 23, 25, 27  | 2/28/20  |
| 5.4     | 1, 2, 6, 10, 12, 13  | 3/6/20   |
| 6.1     | 1, 2, 3, 7, 8, 10, 11, 16, 17, 22, 26, 29, 34, 41, 44, 49, 55, 60        | 3/6/20   |
| 6.2     | 1, 2, 7, 8, 10, 12, 15, 16, 19, 27, 28, 39, 43                           | 3/6/20   |
| 6.3     | 1, 3, 4, 6, 8, 19, 14, 19, 20, 23, 28, 29, 31, 33, 34, 37, 45            | 3/20/20  |
| 6.4     | 1, 2, 3, 4, 5, 6, 7, 8, 9, 14, 15, 21, 22, 29, 39, 44                    | 3/20/20  |
| 8.1     | 1, 4, 6, 7, 13, 16   | 3/27/20  |
| 8.2     | 2, 3, 7, 12, 13, 14, 21, 31, 34, 35, 36, 39, 41                          | 3/27/20  |
| 8.3     | 2, 5, 12, 13, 14, 15, 16, 22, 31, 32, 36, 40, 43, 47, 48, 51             | 3/27/20  |
| 8.4     | 4, 8, 14, 18, 22, 23, 24, 30, 31, 36, 38, 40                             | 4/3/20   |
| 9.1     | 1, 2, 3, 4, 8, 12, 17, 18, 22, 23, 26, 33, 39, 40, 44, 45, 48, 49, 51    | 4/3/20   |
| 9.2     | 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 16, 17, 18, 20, 26, 29, 30, 32, 35       | 4/3/20   |
| 9.3     | 1, 2, 3, 4, 5, 6, 10, 21, 22, 24   | 4/17/20  |
| 9.4     | 3, 4, 5, 7, 8, 11, 12, 25, 27, 28  | 4/17/20  |
| 11.1    | 1, 2, 5, 7, 19, 20   | 4/17/20  |
| 11.2    | 1, 2, 5, 6, 7, 8, 17, 19, 20   | 4/24/20  |
| 11.3    | 1, 2, 3, 11, 12, 15, 29, 30, 35, 36                                      | 4/24/20  |
| 11.5    | 1, 2, 3, 19, 25, 30  | 4/24/20  |
| Finance |  | 5/1/20   |