

**Point Loma Nazarene University**  
**Syllabus: MTH133 Pre-Calculus (3 units)**  
**Fall 2018**  
**Mathematical, Information and Computer Sciences**

**Time and Place:** MWF 8:30-9:25 a.m. Ryan Learning Center 106

**Instructor:** Maria Zack, Ph.D. and Greg Crow Ph.D.

**Phone Number:** 619-849-2458 (Zack) and 619-849-2604 (Crow)

**E-mail:** [mzack@pointloma.edu](mailto:mzack@pointloma.edu) and [gcrow@pointloma.edu](mailto:gcrow@pointloma.edu)

**Office Location:** Trailers #1 (Athletics Parking Lot)

**Office Hours (Dr. Zack):**

Monday	7:30-8:30 a.m.
Tuesday	By appointment
Wednesday	7:30-8:30 a.m.
Thursday	1:00-2:00 p.m.
Friday	3:00-4:30 p.m.

**Office Hours (Dr. Crow):** Posted in Canvas

**Textbook:** *Pre-calculus with Calculus Previews* by Zill and Dewar, (5th Edition)

**Needed Supplies:** Scientific calculator

### **Welcome to Pre-Calculus!**

We look forward to spending the semester learning pre-calculus with you. You will be amazed at how easy some concepts are to understand, and equally amazed at how challenging some problems are to solve. Over the semester, you will experience a range of feelings, including: success and failure; challenge and boredom; accomplishment and frustration. Please know that your fellow classmates and we will be here to help you through it. Also, persistence and hard work means a lot more in this class than "intelligence." Put in time and effort and we know you will succeed.

#### **Course Description:**

An introduction to the functions necessary for the study of calculus with an emphasis on numericals and graphical notions of continuity, limits and derivatives. the following function types are used as examples for the study of the concepts: polynomial, rational, exponential, logarithmic, and trigonometric functions.  
Prerequisite(s): MTH 113 or equivalent.

#### **Learning Outcomes for this Course:**

1. Students will develop an ability to graph functions including polynomial and trigonometric functions.
2. Students will develop an ability to solve problems using polynomial, exponential and trigonometric functions.

#### **Course Philosophy:**

Mathematics requires active participation. Participation means: asking questions, making conjectures and checking them, providing solutions to problems, sharing ideas with classmates. During class time we will participate in the same way. Our advantage is that we have seen the material several times.

**Grading:** Grades for the course will be based on:

Homework	300 points
Exams (2 at 200 points each)	400 points
Final Exam	<u>300 points</u>
Total:	1,000 points

**Homework (30%):** Homework will be assigned every week in class. All homework from the previous week is due at the start of class on Wednesday. A homework assignment is late if it is not received at the start of class on the due date. Late homework will not be accepted without a well-documented emergency. 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 any homework assignment.

**Tests (20% each) and Final Exam (30%):** 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 by the professors 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. We do not intend to accept excuses such as poor communication with parents, benefactors, sport team sponsors and/or travel agents.

**Final Exam Date and Time:**

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.

**The Final Exam is COMPREHENSIVE**  
**Friday, December 14th, 2018, 7:30-10:00 a.m.**

**Grading Scale:** Course grades will be assigned according to the following scale:

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)

**Cell Phones:** Turn off any cell phone, electrical devices or things that are distracting while you are in class. Also, do not text or work on other classes while in class (to do so is disrespectful to everyone in the room) and it is not the best use of class time.

**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 two hours outside of class for every one hour in class working on homework and going over concepts. When doing 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.

**University Mission:** ~ Teach ~ Shape ~ 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.

**Attendance:**

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](#).

**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.

**Academic Accommodations:**

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.

**Academic Honesty:**

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

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

**Sources of Help:**

1. The professors. If you have questions, ask us. See office hours.
2. Other classmates. Form study groups! Work together!
3. Drop in math tutoring. See the professors for the schedule for the Math Learning Center.

**Class Schedule, subject to change**

Monday	Tuesday	Wednesday	Thursday	Friday
27-Aug <b>NO CLASSES</b>	28-Aug Introduction 1.1 Real Line	29-Aug 1.2 Absolute Value 1.3 Rectangular Coordinates	30-Aug	31-Aug 1.4 Circles and Graphs
3-Sep <b>Labor Day</b>	4-Sep	5-Sep 2.1 Functions and Graphs	6-Sep	7-Sep 2.2 Symmetry & Transformations
10-Sep 2.3 Linear Functions	11-Sep	12-Sep 2.4 Quadratic Functions	13-Sep	14-Sep 2.5 Piecewise Functions
17-Sep 2.6 Combining Functions	18-Sep	19-Sep 2.7 Inverse Functions	20-Sep	21-Sep 2.8 Word Problems
24-Sep 3.1 Polynomial Functions	25-Sep	26-Sep 3.2 Division of Functions Exam Review	27-Sep	28-Sep <b>EXAM #1</b>
1-Oct 3.3 Factors of Polynomials	2-Oct	3-Oct 3.4 Zeros of Polynomials	4-Oct	5-Oct 3.5 Approximating Zeros Go Over Exam
8-Oct 3.6 Rational Functions	9-Oct	10-Oct 4.1 Angles and Measurement	11-Oct	12-Oct 4.2 Sine and Cosine
15-Oct 4.3 Graphs of Sine & Cosine	16-Oct	17-Oct 4.4 Other Trig Functions	18-Oct	19-Oct <b>FALL BREAK</b>
22-Oct 4.5 Verifying Trig Identities	23-Oct	24-Oct 4.6 Sum & Difference Formulas	25-Oct	26-Oct 4.7 Product Formulas
29-Oct 4.8 Inverse Trig Functions	30-Oct	31-Oct 4.9 Trig Equations	1-Nov	2-Nov 5.1 Right Triangle Trigonometry
5-Nov 5.2 Applications Exam Review	6-Nov	7-Nov <b>EXAM #2</b>	8-Nov	9-Nov 5.3 Law of Sines
12-Nov 5.4 Law of Cosines Go Over Exam	13-Nov	14-Nov 6.1 Exponential Functions	15-Nov	16-Nov 6.2 Logarithmic Functions
19-Nov 6.3 Exponential & Logarithmic Equations	20-Nov	21-Nov <b>THANKSGIVING BREAK</b>	22-Nov <b>BREAK</b>	23-Nov <b>THANKSGIVING BREAK</b>
26-Nov 6.4 Models	27-Nov	28-Nov 8.1 Polar Coordinates	29-Nov	30-Nov 8.2 Polar Equation Graphs
3-Dec 10.1 Sequences	4-Dec	5-Dec 10.2 Series	6-Dec	7-Dec Final Review
10-Dec	11-Dec	12-Dec	13-Dec STUDY SESSION	14-Dec <b>FINAL EXAM 7:30-10:00 AM</b>