Scholl of STEM: Department of Mathematical, Information and Computer Science

MTH 2023: Fundamentals OF elementary Mathematics II

3.0 Units

Spring 2026

T&TH 1:30 – 2:45 pm

Rohr Science 395

Final Exam: Tuesday, May 5 1:30 - 4:00

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Office Location and Office Hours: Rohr Science 222 (times posted in Canvas)

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

Catalog Description:

MTH2023 Fundamentals of Elementary Mathematics II (3 units)

A continuation of Mathematics 2013 focusing on additional knowledge necessary for a California multiple-subject teaching credential (K-8). Topics covered in this course include data analysis and statistics, probability, combinations and permutations, simulations as well as standard and non-standard measurement. Planar and three-dimensional geometry and geometric constructions are studied, including an algebraic approach to geometry. This class is highly interactive and emphasizes group work and cooperative learning.

Prerequisite: MTH 1013 or equivalent, MTH2013 (3 Units) Fundamentals of Elementary Mathematics I.

Program and Course Learning Outcomes

- Students will be able to demonstrate a facility with operations on the integers.
- Students will be able to demonstrate a facility with operations on the rational numbers.
- Students will be able to apply concepts from number theory to solve problems.

Required Texts and Recommended Study Resources

Required Materials:

- Billstein, Libeskind, and Lott, *A Problem Solving Approach to Mathematics for Elementary School Teachers,* 13th Edition
- Needed Supplies: A calculator, a compass, a protractor, a ruler, and access to a computer.

Students are responsible for having the required course textbooks prior to the first day of class.

All supplemental materials posted on this course site (including articles, book excerpts, or other documents) are provided for your personal academic use. These materials may be protected by copyright law and should not be duplicated or distributed without permission of the copyright owner.

Assessment and Grading

Grading distribution:

- Class Participation 10%
- Written Homework: 20%
- Warm up Questions 5%
- Video and Notes 5%
- Mid Term: 25%
- Final Exam: 35%

Grades will be based on the following:

- **Class Participation**: Attendance at each class is required. In these class meetings, we will have lectures, works on activities, problems, and labs. Some classwork will be collected and graded, and some will be collected and given credit for attempting the work. The labs (which will be done during the lab session) are due at the scheduled dates and times. Late lab assignments will not be accepted with the following exception: up to a maximum of one lab assignment will be accepted up to 3 days late provided that **consent is received from the professor before it is due**. Your lowest lab assignment score will be dropped.
- **Written Homework**: Homework problems will be assigned regularly and posted on Canvas. A homework assignment is late if it is not submitted at the beginning of class on the due date. Please check regularly to ensure that you are keeping up with the homework. Late homework will not be accepted with the following exception: up to a maximum of one homework assignment will be accepted up to 3 days late provided that **consent is received from the professor before it is due**. Your lowest written homework score will be dropped.
- **Midterms and Final Examination**: Exams and the Final Exam will include problems and questions from the material assigned in the text, readings and handouts, as well as material presented in class. No exam shall be missed without a well-documented emergency beyond your control.
- **Notes and Videos**: Each section will have videos to watch, and you should take notes. Your notes are to be submitted in Canvas by midnight on Monday. Late notes will not be accepted with the following exception: up to a maximum of one note assignment will be accepted up to 3 days late provided that **consent is received from the professor before it is due**. Your lowest note score will be dropped.
- **Warm Up Questions**: After you watch the videos and take notes, you will have a small set of warm up questions to do and submit in Canvas. These problems will help me to identify the areas where students are struggling before we meet for class on Tuesday. Late warm-up questions assignments will not be accepted with the following exception: up to a maximum of one warm-up questions assignment will be accepted up to 3 days late provided that **consent is received from the professor before it is due**. Your lowest score will be dropped.

- **Late work will not be accepted**. Homework, lab assignments, notes and warm-up questions that are submitted late will be recorded with a score of zero. During the course, you may find that you are unable to submit an assignment on time due to a personal situation (for example, a personal or family illness, accident, business trip, etc.). This is why your lowest assignments will be dropped, as described above. Beyond the single use of the 3-day extensions described above, there are no exceptions to this policy so please use your dropped assignments wisely.

Grades are based on the number of points accumulated throughout the course with the following exception. A student must pass either the midterm and/ or final exam in order to pass the class. That is, a minimum score of 60% must be achieved on the exams, or else the final grade will be an F regardless of all other point totals. Approximate minimal percentage required to obtain a given grade are:

Sample Standard Grade Scale Based on Percentages

A	B	C	D	F
A [92.5-100]	B+ [87.5-90)	C+ [77.5-80)	D+ [67.5-70)	F [0-60)
A- [90-92.5)	B [82.5-87.5)	C [72.5-77.5)	D [62.5-67.5)	
	B- [80-82.5)	C- [70-72.5)	D- [60-62.5)	

Final Examination Policy

Successful completion of this class requires taking the final examination on its scheduled day. The final examination schedule is posted on the Traditional Undergraduate Records: Final Exam Schedules site. If you find yourself scheduled for three (3) or more final examinations on the same day, you are authorized to contact each professor to arrange a different time for one of those exams. However, unless you have three (3) or more exams on the same day, no requests for alternative final examinations will be granted.

Incompletes and Late Assignments

All assignments are to be submitted/turned in by the beginning of the class session when they are due (labs are due on Saturday) - including assignments posted in Canvas. Incompletes will only be assigned in extremely unusual circumstances.

Artificial Intelligence (AI) Policy

You are allowed to use Artificial Intelligence (AI) tools (e.g., ChatGPT, Gemini Pro 1.5, GrammarlyGo, Perplexity, etc) to generate ideas, but you are not allowed to use AI tools to generate content (text, video, audio, images) that will end up in any work submitted to be graded for this course. If you have any doubts about using AI, please gain permission from the instructor.

PLNU Academic Accommodations Policy

PLNU is committed to providing equal opportunity for participation in all its programs, services, and activities in accordance with the Americans with Disabilities Act (ADA). 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 619-849-2533). Once a student's eligibility for an accommodation has been determined, the EAC will work with the student to create an Accommodation Plan (AP) that outlines allowed accommodations. Professors are able to view a student's approved accommodations through Accommodate.

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. Accommodations are

not retroactive so clarifying with the professor at the outset is one of the best ways to promote positive academic outcomes.

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. Students cannot assume that because they had accommodations in the past, their eligibility at PLNU is automatic. All determinations at PLNU must go through the EAC process. This is to protect the privacy of students with disabilities who may not want to disclose this information and are not asking for any accommodations.

LomaBooks Instructions for Students

This course is part of our course material delivery program, **LomaBooks**. The bookstore will provide each student with a convenient package containing all required physical materials; all digitally delivered materials will be integrated into Canvas.

You should have received an email from the bookstore confirming the list of materials that will be provided for each of your courses and asking you to select how you would like to receive any printed components (in-store pick up or home delivery). If you have not done so already, please confirm your fulfillment preference so the bookstore can prepare your materials.

For more information about **LomaBooks,** *please go: HERE*

Additional Course Information

Additional PLNU policies and practices that apply to this course can be found at the following link: https://docs.google.com/document/d/11BgAANLOJ9tjt837d24EZ181ukM2qzHF/edit

MTH 2023 Spring 2026 Schedule

WK	MONDAY: Video Notes and Warm Up Questions Due	TUESDAY: Class Meeting + Homework Due	THURSDAY:
1	1/12 Nothing	1/13 Introduction to class 9.1: Determining Probabilities 9.2: Multistage Experiments and Modeling Games	1/15 Lab session: Probability & Experiments
2	1/19 9.3: Simulations and Applications in Probability 9.4: Permutations and Combinations in Probability	1/20 9.3: Simulations and Applications in Probability 9.4: Permutations and Combinations in Probability **Due: Written Homework Sections 9. 1 & 9.2**	1/22 Lab Session: Permutations & Combinations
3	1/26 10.1: Designing Experiments/ Collecting Data 10.2: Displaying Data: Part 1	1/27 10.1: Designing Experiments/Collecting Data 10.2: Displaying Data: Part 1 **Due: Written Homework Sections 9. 3 & 9.4**	1/29 Lab session: Collecting & Displaying Data
4	2/2 10.3: Displaying Data: Part 2 10.4: Measures of Central Tendency and Variation	2/3 10.3: Displaying Data: Part 2 10.4: Measures of Central Tendency and Variation **Due: Written Homework Sections 10.1 & 10.2**	2/5 Lab session: Measures of Center & Variation
5	2/9 11.1: Basic Notions 11.2: Curves, Polygons, and Symmetry	2/10 11.1: Basic Notions 11.2: Curves, Polygons, and Symmetry **Due: Written Homework Sections 10.3 & 10.4**	2/12 Lab session: Notions & Curves, Polygons & Symmetry
6	2/16 11.3: More About Angles 11.4: Geometry in Three Dimensions	2/17 11.3: More About Angles 11.4: Geometry in Three Dimensions **Due: Written Homework Sections 11.1 & 11.2**	2/18 Lab session: Angles & Geometry in 3D
7	2/23 Exam Questions	2/24 Review **Due: Written Homework Sections 11.3 & 11.4**	2/26 Lab session: Study
8	3/2 No videos- study for exam	3/3 Mid-term Exam **Due: Chapters 9, 10 & 11 Reviews**	3/5 No class
Spring Break 3/19 to 3/13			
9	3/16 12.1: Congruence Through Constructions 12.2: Additional Congruence Theorems	3/17 12.1: Congruence Through Constructions 12.2: Additional Congruence Theorems	3/19 Lab session: Construction & Congruence
10	3/23 12.3: Additional Constructions 12.4: Similar Triangles and Other Similar Figures	3/24 12.3: Additional Constructions 12.4: Similar Triangles and Other Similar Figures **Due: Written Homework Sections 12.1 & 12.2**	3/26 Lab Session: Constructions & Similar
11	3/30 13.1: Linear Measure 13.2: Areas of Polygons and Circles	3/31 13.1: Linear Measure 13.2: Areas of Polygons and Circles **Due: Written Homework Sections 12.3 & 12.4**	4/2 EASTER BREAK No class

12	4/6 Easter Break	4/7 13.3: The Pythagorean Theorem, Distance Formulas, and Equation of a Circle 13.4: Surface Area	4/9 Lab session: Pythagorean & Surface Area
13	4/13 13.5: Volume, Mass, and Temperature 14.1: Translations and Rotations	4/14 13.5: Volume, Mass, and Temperature 14.1: Translations and Rotations **Due: Written Homework Sections 13.1& 13.2**	4/16 Lab session: VMT & Translations & rotations
14	4/2 14.2: Reflections and Glide Reflections 14.3: Dilations	4/21 14.2: Reflections and Glide Reflections 14.3: Dilations **Due: Written Homework Sections 13.3 & 13.4**	4/23 Lab session: Reflection & glide & dilations
15	4/27 Exam Questions	4/28 Review **Due: Written Homework Sections 13.5 & 14.1**	4/30 Lab session: Study
Finals	5/4	5/5 **Final Exam 1:30 to 4:00** **Due: Written Homework Sections 14.2 & 14.3** **Review Chapters 9-14**	5/7