Precalculus
CU Upward Bound Program Summer 2023

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Location: HUMN 250

Course Description

The goal of this course is to help students develop computational and critical thinking skills through introduction of topics covered in precalculus. Topics introduced in this course include functions (polynomial, logarithmic, exponential, trigonometric functions), trigonometric identities and applications, vectors and matrices, and limits and continuity. This course is intended to provide a brief overview of topics covered in pre-calculus so students have some exposure before starting the official course.

Course Objectives

After completing this course, students should be / should have:

1) Students should have introductory knowledge of topics covered in precalculus
2) Students should be able to work in groups to successfully complete a mathematical project.
3) Students should be able to think critically about mathematical concepts.
4) Students should be able to provide written and oral communication on mathematical concepts and ideas.

Grading

Homework: 30 points

Three homework assignments will be given with equal weights. Students are highly encouraged to work in groups to finish homework; however, students should produce and submit their own work. Homework will be turned in at the beginning of class.

- Homework 1: 10 points
- Homework 2: 10 points
- Homework 3: 10 points

Participation: 10 points

During lecture, students will have to fill out lecture notes. Examples will be covered in class so students are expected to pay attention and solve along.

Project: 40 points

Students will work in a group to perform research on topics covered in this course. Students will have to read a published paper on the selected topic and perform research based on the ideas presented.

- **Written Report:** 15 points
- **In Class Presentation:** 15 points
- **Peer Evaluation:** 10 points

Exam: 20 points

MID MONTH EXAM: July 5th!

Exam topics covered from June 14th - June 30th will be on the mid month exam. This exam will be in class and students will have class time to complete the exam. This exam will be a written exam with no multiple choice so students will have the opportunity to get partial credit.

Total Points: 100 points

Grade Distribution
A : 90-100
B: 80-89
C: 70-79
D: 60-69
F: < 60

NOTE: *Any grade below C indicates that free time will be replaced with early study hall.*

Schedule

Date	**Topic**	**Homework**
Wednesday, June 14th	Introduction to Course and Knowledge Check	
Friday, June 16th	Functions: Polynomials	
Wednesday, June 21	Functions: Logarithmic	
Friday, June 23	Functions: Exponential	**Homework 1 Due**
Monday, June 26th	Trigonometry	
Wednesday, June 28th	Trigonometry	
Friday, June 30th	Linear Algebra: Vectors and Matrices	
Wednesday, July 5th	Midterm	**Homework 2 Due**
Friday, July 7th	Linear Algebra: Vectors and Matrices	
Monday, July 10th	Limits and Continuity	
Wednesday, July 12th	Limits and Continuity	
Monday, July 17th	Presentation	**Homework 3 Due**
Wednesday, July 19th	Presentation	

Note: The instructor has the right to change the above schedule.

Late Assignments
Late homework assignments will be accepted based on instructor approval. Students are required to communicate with the instructor and instructor assistant if they are not able to meet a deadline. If students want to improve their homework grade, they will be able to redo one homework assignment. It is important to note that students will solve new problems instead of redoing the original homework assignment.