MTH 112, Pre-Calculus Algebra
2025 Fall Term (October 5, 2026 - January 16, 2026)

CLASS Wednesday (8:25 AM – 11:10 AM) in room D8-106

Online - MS Teams code: elmuuxt

WORTH 3 credits

PREREQUISITE No

INSTRUCTOR **Dr. Doan Duy Trung**, E-mail: trung.doanduy@hust.edu.vn

COURSE DESCRIPTION
Topics include the algebra of functions, including polynomial, rational, exponential, and logarithmic functions. The course also contains sets, maps, algebra matrix, systems of equations and inequalities, linear and quadratic equations and inequalities.

COURSE OBJECTIVES
At the conclusion of the course the students will be able to:
1. Understand the concepts of sets and some operations on sets, maps.
2. Understand the set of complex numbers and their operations.
3. Understand the basic of maps.
4. The concepts of matrices and operations on matrices
5. Solve exponential and logarithmic / growth and decay equation.
6. Solve system of linear equations using Gauss elimination method.

TEXTBOOK
MTH 1112 Pre-Calculus Algebra (Custom Edition for Troy University), taken from Algebra and Trigonometry (9th Edition) by Michael Sullivan), 2012.

STUDENT EVALUATION
Attendance: 10%, HW+Exercise 10%, Midterm: 30%, Final exam: 50%
1. **Homework:** *These are weekly assignments. If you don't show your work, you get a zero. You will be asked (randomly) to present your solutions.*
2. **Quizzes and exams:** *There will be 2 exams given during the semester. There is no such thing as a makeup quiz or exam. If you miss a quiz or an exam, you get a zero.*

EXAMINATION FORMAT
Midterm Exam: 60 - 90 minutes; Final: 90 - 120 minutes.

GRADING SCALE
A (90-100), B (80-89), C (70-79), D (60-69), F (<60)

Tentative class schedule ()

No	Date	Chapters	Topics	Remarks
1	Oct. 7	1	Sets and set operations	**Lecture**
2	Oct. 14		Sets (continue)	**Exercise**
3	Oct. 21		Mappings & Complex Numbers	**Lecture**
4	Oct. 28		Mappings & Complex Numbers (continue)	**Exercise**
5	Nov. 4		Complex Numbers (Canonical and trigonometric forms, Operations: Power, Root, Fundamental theorem of algebra)	**Lecture**
6	Nov. 11		Complex Numbers (Canonical and trigonometric forms, Operations: Power, Root, Fundamental theorem of algebra) (Continue)	**Exercise**
7	Nov. 18		Midterm Exam	
8	Nov. 25		Matrices (Definition, matrix operations), Determinant	**Lecture**
9	Dec. 2		Matrices (Definition, matrix operations), Determinant (Continue	**Exercise**
10	Dec. 9		Determinant and Rank of matrix	**Lecture**
11	Dec. 16		Determinant and Rank of matrix (Continue)	**Exercise**
12	Dec. 23		Linear system of equations	**Lecture**
13	Dec. 30		Linear system of equations (continue)	**Exercise**
14	Jan. 6		Exam Review Session	
15	TBAh		Final Exam	

CLASS REGULATION: Students are expected to:

1. Punctually attend all scheduled classes.
2. Be responsible for all instructions and assignments given in class as well as for the supporting textbook content.
3. Read the textbook material **before** the lecture covering that material and attempt the suggested problems before the material is covered in class.
4. Be an active participant in this class while being respectful of everyone else in the class.
5. **Turn off cell phones when you enter the classroom. If your cell phone rings during class, you will be asked to leave the class.**

ABSENCES:

Do not prepare homework before attending the class equal one absence.

AFTER THREE ABSENCES, STUDENT WILL RECEIVE AN AUTOMATIC F AND MUST REPEAT THE COURSE, EVEN IF ALL THEIR QUIZZES, EXAMS RESULTED IN A PASSING FINAL GRADE.

THIS SYLLABUS IS TENTATIVE AND SUBJECT TO CHANGE. *The instructor may make changes if deemed necessary. Changes will be announced in class.*