MTH 112, Pre-Calculus Algebra
2021 Fall Term (October, 4th , 2021 – January, 15th , 2022)

CLASS Tuesday (8:30 am – 11:15 am) at…
Online - MS Teams code: tn2j6xf

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 systems of equations and inequalities, linear and quadratic equations and inequalities, graphs of polynomials, and the binomial theorem.

COURSE OBJECTIVES
At the conclusion of the course the students will be able to:
1. Understand the fundamental notions of functions, such as: domain and range, graph, 1-1 function, inverse function, piecewise defined function, etc.
2. Apply linear, quadratic, polynomial, and rational functions, such as: find demand/supply functions; find cost/revenue/profit functions; find maximum profit; etc.
3. Manipulate and evaluate exponential, logarithmic functions.
4. Graph algebraic, exponential, and logarithmic functions.
5. Apply the formulae for compound interest and continuous compound.
6. Solve exponential and logarithmic / growth and decay equation.
7. Solve system of linear equations using Gauss elimination method.
8. Solve system of linear inequalities and do problems on linear programming.
9. Evaluate binomial coefficient and apply binomial theorem to find binomial expansions.

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

STUDENT EVALUATION
Homework + Attendance: 10%, Test: 20%, Midterm: 30%, Final exam: 40%
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 tests and 2 exams given during the semester. There is no such thing as a makeup quiz or exam. If you miss a test or an exam, you get a zero.*

EXAMINATION FORMAT
Test: 30 minutes; Midterm Exam: 90 minutes; Final: 120 minutes.

GRADING SCALE

Troy University Resources

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

Tentative class schedule ()

No	Date	Chapters	Topics	Remarks
1	05 -Oct.	Review,	Review of basic concepts on functions and graphs	
2	12-Oct.	Chap 1	Equations and Inequalities	
3	19-Oct.	Chap 2	Graphs	
4	26-Oct.	Chap 3	Functions and Their Graphs	Test 1
5	02-Nov.	Chap 4	Linear and Quadratic Functions	
6	09-Nov.	Chap 5	Polynomial and Rational Functions	
7	16-Nov.		Exponential and Logarithmic Functions	
9	23-Nov.	Chap 12.1-12.3	System of linear equations	
8	30-Nov.		**Review before Midterm Exam: Question & Answer**	**Midterm Exam** (chapters 3,4,5 & 6)
10	7-Dec.	12.4	Matrix Algebra	
11	14-Dec.	12.6&12.7	Systems of Nonlinear Equations & System of Inequalities	
12	21-Dec.	12.8	Linear Programming	Test 2
13	28-Dec.		Sequences, Binomial Theorem	
14	04-Jan.		Review for the Final Exam: Q&A	
15	10-Jan.		**Final Exam**	**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.*