



# SCHOOL OF STEM SYLLABUS



**TERM:**

**INSTRUCTOR:**

**COURSE CODE:** MAT-123

**OFFICE HOURS:**

**COURSE TITLE:** Mathematics for Liberal Arts

**OFFICE LOCATION:**

**DAY(S) AND TIME(S):**

**EMAIL:**

**LOCATION:**

**PHONE:**

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**COURSE PREREQUISITE:** Exit Basic Algebra

**CREDITS:** 3

**COURSE DESCRIPTION:**

Students in appropriate non-STEM programs apply mathematics to real-world problem-solving. The course exposes students to forms of mathematics useful in decision-making, planning, and understanding the world of their experiences, emphasizing how mathematics can model human behavior and natural activity. Topics include critical thinking skills, sets, Venn diagrams and their applications, logic, tree diagrams, graphs and sets, mathematical systems, graphs, functions, linear and quadratic functions, probability, and statistics. This course does not serve as a prerequisite for MAT-110.

**STUDENT LEARNING OUTCOMES:**

Upon successful completion of this course, students will be able to:

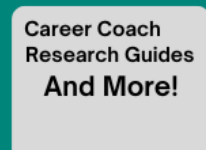
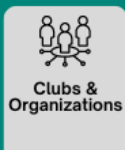
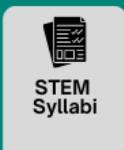
1. Describe and mathematically critique the use of an appropriate method in problem-solving
2. Critically analyze and comprehend logical statements.
3. Communicate accurate mathematical terminology and notation to explain strategies to solve problems and interpret solutions.
4. Apply various reasoning, problem-solving, and critical thinking techniques to solve quantitative problems and make decisions.
5. Analyze statistical patterns to make accurate predictions and estimates.
6. Use technology effectively to improve mathematical understanding, solve problems, and present solutions.

**TEXTBOOK AND SUPPLEMENTAL MATERIALS:**

A Survey of Mathematics With Applications, Angel, Abbott, Runde, 9th Edition, 2017 ISBN: 13:978-0-13-411210-7.

## STEM STUDENT HUB

Information & Resources tailored towards students taking any STEM courses



**GRADING POLICY:**

Homework	15%
Two In Class Exams	40%
Projects	25%
Final Exam	20%

**SAMPLE COURSE SCHEDULE:**

Week	Topic	Content	SLO
1	Critical Thinking Skills	Inductive and Deductive reasoning	1, 2
		Estimation	1
		Problem-Solving	1
2-3	Sets	Set Concepts	2, 3
		Subsets	2, 3
		Venn diagrams and Sets operations	2, 3
		Venn diagrams with Three Sets	2, 3
		Verification of Equality of Sets.	2, 3
		Applications of Sets.	2, 3
		Infinite Sets	2, 3
		Statements and Logical connectives	2, 3
		Exam #1	
4-5	Logic	Truth Tables for Negation, Conjunction, and Disjunction	1, 2
		Truth Tables for the Conditional and Biconditional	1, 2
		Equivalent Statements	1, 2
		Symbolic Arguments	2, 3
		Euler Diagrams and Syllogistic Arguments	2, 3
		Switching Circuits	2, 3, 4

		Exam #2 Introduce Group Project #1	
6 7	Number theory	The integers	3
		The Rational Numbers	3
		The Irrational Numbers	3
		Real numbers and their properties	3
		Rules of Exponential and Scientific Notation	3
		Arithmetic and Geometric Sequences	3
		Fibonacci Sequence	3,4
		Order of Operations and Solving Equations	3, 4

### HCCC POLICIES, STATEMENTS, AND SERVICES:

<https://www.hccc.edu/administration/academic-affairs/syllabus-addendum.html>



