

COURSE CODE: MATH-164
COURSE NAME: Mathematics – I
CREDIT HOURS: Theory = 3 Practical = 0 Total = 3
CONTACT HOURS: Theory = 48 Practical = 0 Total = 48
PREREQUISITE: None
MODE OF TEACHING: Three hours of lecture per week

Course Description:

To prepare the students, not majoring in mathematics, with the essential tools of algebra to apply the concepts and the techniques in their respective disciplines.

TOPICS COVERED:

Week	Topic
1	Preliminaries: Real-number system, complex numbers, introduction to sets, set operations
2	Functions, types of functions
3	Matrices: Introduction to matrices, types, matrix inverse
4	Determinants, system of linear equations
5	Cramer's rule
6	Quadratic Equations: Solution of quadratic equations, qualitative analysis of roots of a quadratic equation
7	Equations reducible to quadratic equations
8	Cube roots of unity
9	Mid Semester Exam
10	Relation between roots and coefficients of quadratic equations
11	Sequences and Series: Arithmetic progression
12	Geometric progression
13	Harmonic progression
14	Binomial Theorem: Introduction to mathematical induction, binomial theorem

	with rational and irrational indices
15	Binomial Theorem: Introduction to mathematical induction, binomial theorem with rational and irrational indices
16	Trigonometry: Fundamentals of trigonometry, trigonometric identities
17	Trigonometry: Fundamentals of trigonometry, trigonometric identities
18	End Semester Exam

Text and Material:

1. Algebra and Trigonometry 6th Edition by Robert F. Blitzer 2018, ISBN13: 9780134463216, ISBN10: 0134463218
2. College Algebra and Trigonometry 8th Edition by Richard N. Aufmann 2015, ISBN13: 9781285449425, ISBN10: 1285449428
3. Algebra and Trigonometry With Analytic Geometry 13th Edition by Earl Swokowski 2012, ISBN13: 9780840068521, ISBN10: 0840068522

ASSESSMENT SYSTEM:

Theoretical/Instruction	100%
Assignments	10%
Quizzes	15%
Mid Semester Exam	25%
End Semester Exam	50%
Practical Work	0%
Lab Attendance	0%
Lab Report	0%
Lab Quiz	0%
Lab Rubrics	0%