

Open Elective
(For Students of Arts and Social Science Stream)

MATOE 1.1(C): Basic Mathematics-I	
Teaching Hours : 3 Hours/Week	Credits: 3
Total Teaching Hours: 42 Hours	Max. Marks: 100 (S.A.- 60 + I.A. – 40)

Course Learning Outcomes: This course will enable the students to

- Translate the real word problems through appropriate mathematical modelling.
- Explain the concepts and use matrices and determinants
- To become familiar with concepts of set theory and their basic operations through Venn-diagrams
- To learn definitions of trigonometric functions and the complex numbers..

Unit -1 : Matrices and Determinants : Definition of Matrices, Types of Matrices ,Algebra of Matrices, The inverse of square matrices using “**Adjoint method**” , property of Determinants and examples on them .Solving the system of equation (3*3)of 3 unknowns by using CRAMERS’s Rule. 14 Hours

Unit -2 Algebra – Set theory and simple applications of Venn Diagram, relation ,functions, mathematical logic, indices, logarithms, permutation and combination. And some Simple Examples. 10 Hours

Unit-3 : Trigonometry and Complex Number :

Trigonometric Function : Positive and Negative angle, Measuring angle in radians and Degrees, Definition of Trigonometric Function , Trigonometric Function of some and differences of two Angles , Definition of Allied Angle , obtaining their trigonometric Ratios , trigonometric ratios of Multiple angles, trigonometric equations, simple application of sine and cosine Rule, Heights and Distances .

Introduction of Square root of -1 ($\sqrt{-1}$) by solving quadratic equation, brief Description of Algebraic properties of Complex number, Argand Plane and Polar representation of Complex number and problem.

Examples to find the solutions of quadratic equation in complex number. Square root of a complex number with examples. 18 Hours

References:

1. Basic Matrices ALLEL R.G.A
2. Basic matrices Rajesh Singh Macmillan
3. Algebra and Matrices by M.L. Khanna
4. Bible to Basic Mathematics by Pragati Agrawal.

Pragati 