

ALGEBRA AND TRIGONOMETRY

Credit: 04 (L-3, T-1, P-0)
MM: 100

Course Code: BEB407
Contact Hours: 60

Course Objectives:

- Acknowledge to student about group.
- To provide the concept of separation into real and imaginary parts.
- To make able to distinguish between Ring & Field.
- To make them clear about Homomorphism and Isomorphism.

Course Outline:

Unit I

- **Algebra:** Definition of a group with examples and simple properties, Subgroups, Generation of groups, Cyclic groups, Coset decomposition, Lagrange's theorem and its consequences. Homomorphism and Isomorphism.

Unit II

- Permutation groups and Cayley's theorem. Normal subgroups, Quotient group, Fundamental theorem of Homomorphism. The Isomorphism theorems for groups, Introduction of Ring & Field.

Unit III

- Complex functions and separation into real and imaginary parts.

Unit IV

- Exponential, Direct and inverse trigonometric and hyperbolic functions, logarithmic function, Gregory's series, Summation of series.

Course Outcomes:


After completing the course, students will be able to:


1. Understand various concept of Group.
2. Analyze the concept of Homomorphism.
3. Identify the difference between Homomorphism and Isomorphism.
4. Understand the Isomorphism.
5. Evaluate the trigonometric and hyperbolic functions.
6. Solve and prove the Ring and Field properties.

Suggested Books:

- S.C. Malik and Shanti-Arora, Mathematical Analysis
- Shanti Narayan, Elements of Real Analysis, S. Chand & Company, New Delhi.
- I. N. Herstein, Topics in Algebra, Wiley Eastern Ltd. New Delhi, 1975.
- D.T. Finkbeiner, Introduction to Matrices and Linear transformations, CBS Publishers, 1986.
- K.B. Datta, Matrix and Linear Algebra, PHI Pvt. Ltd. New Delhi, 2000.
- P.B. Bhattacharya, S.K.Jain, S.R. Nagpal, First Course in Linear Algebra, Wiley Eastern Ltd. New Delhi, 1983.
- S. Singh, Modern Algebra, Vikas Publ. House, India


Registrar
Invertis University
Bareilly
New Delhi,


Dean
Faculty of Education
Invertis University
Bareilly-243123, U.P


Head
Department of Education
Faculty of Education & Mass Comm.
Invertis University, Bareilly (UP)