BCA 198: Remedial Mathematics

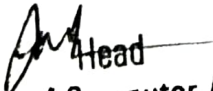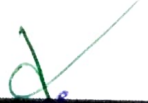| Teaching Scheme	Examination Scheme
Lectures: 3 hrs/Week Tutorials: 1 hr/Week Credits: 4	Class Test -12Marks Teachers Assessment - 6Marks Attendance – 12 Marks End Semester Exam – 70 marks

Course Objectives:

1. Become confident in using mathematics to analyze and solve problems both in university and in real-life situations
2. Appreciate the logic and basics of mathematics
3. Enjoy mathematics and develop patience and persistence when solving problems in mathematical domain.
4. Understand and be able to use the language, symbols and notation of mathematics
5. Develop mathematical curiosity and use inductive and deductive reasoning when solving problems
6. Recognize that mathematics permeates the world around us.
7. Develop the knowledge, skills and attitudes necessary to pursue further studies in mathematics

Detailed Syllabus:

Unit I (10 hours)
Quadratic Equations: Quadratic equation, nature of the roots of a quadratic equation, relation between roots and coefficients, formation of a quadratic equation with given roots, solution of equations reducible to quadratic forms.

UNIT - II (10 Hours)
Matrices: Addition, Subtraction, Multiplication, Inverse of matrices, Simultaneous equation by matrices.

UNIT - III (10 Hours)
System of Coordinates: Certain co-ordinates, distance between two parts, area of triangle, locus of points, straight line, intercept form in normal.

UNIT - IV (10 Hours)
Differential Calculus: Definition and formulation of differential calculus, Rules of standard form of differential calculus, Chain Rule, Parametric rule.

UNIT - V (10 Hours)
Integral Calculus: Standard form of Integral calculus, Partial fraction of Integral, Trigonometric function of Integral calculus.

UNIT - VI (10 Hours)
Linear Differential equations: Linear differential equation of order greater than one with constant coefficient complimentary function, and particular Integral.

Text and Reference Books
1. A textbook of Mathematics for XI-XII Students, NCERT Publication Vol. I-IV. (Module I&II)
2. Loney, S.L "Plane Trigonometry" AITBS Publishers. (Module III)
3. Loney, S.L "The elements of coordinate geometry" AITBS Publishers. (Module II)
4. Narayan Shanti, Integral calculus, Sultan Chand & Co. (Module I & II)
5. Prasad Gorakh Text book on differential calculus, Pothishala Pvt. Ltd., Allahabad. (Module II)

Course Outcomes:
After completing the course, students will be able to:

1: Students will simplify and evaluate the concept and problems of quadratic equation.

2: Students will form and solve matrix problems also their real-world implementation.

3: Students will understand the concepts of differentiation and their real-world applications.

4: Students will form differential equations with the help of integration also their advancement in application.

5: Students will form use of vector and scalar also the concept of gradient, divergent and curl solving etc.

6: Students will understand the basics of coordinate and curve like circle, parabola, ellipse, hyperbola

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