

**B.Sc. Biotechnology; Semester-II
BST205 Elementary Math II**

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

To give an overview of Mathematical sciences and their significance. To give basic knowledge of mathematics for understanding of evolutionary biology. To have an overview of new domain mathematical biology

Course Learning Outcomes:

After completing the course, the student shall be able to:

- CO1: To define the basic application of mathematics in science and biotechnology,
- CO2: To summarize the applied mathematics in life sciences,
- CO3: To determine basic principles of vectors, algebra and 3D geometry.

UNIT-I: ALGEBRA

ALGEBRA: Statement of Fundamental Theorem of Algebra, solution of quadratic equations in the complex number system. Linear Inequalities: Linear inequalities. Algebraic solutions of linear inequalities in one variable and their representation on the number line. Graphical solution of linear inequalities in two variables. Solution of system of linear inequalities in two variables-graphically. Series: Series. Arithmetic progression (A.P.), arithmetic mean (A.M.) Geometric progression (G.P.), general term of a G.P., sum of n terms of a G.P., geometric mean (G.M.), relation between A.M. and G.M. Sum to n terms of the special series n , n^2 and n^3

UNIT- II: COORDINATE GEOMETRY

Straight Lines: Brief recall of 2D from earlier classes. Slope of a line and angle between two lines. Various forms of equations of a line: parallel to axes, point-slope form, slope-intercept form, two point form, intercepts form and normal form. General equation of a line. Distance of a point from a line. **Conic Sections:** Sections of a cone: circle, ellipse, parabola, hyperbola, a point, a straight line and pair of intersecting lines as a degenerated case of a conic section. Standard equations and simple properties of parabola, ellipse and hyperbola, Standard equation of a circle

UNIT- III: VECTORS

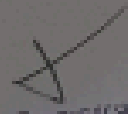
Vectors: Vectors and scalars, magnitude and direction of a vector. Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. Scalar (dot) product of vectors, projection of a vector on a line. Vector (cross) product of vectors


 Head

 Department of Biotechnology
 Invertis University, Bareilly (U.P.)


 Dean

 Faculty of Science
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 Registrar
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