Curriculum Delivery for 2nd Semester
Four-Year Undergraduate Program (FYUP)
Mathematics
Session: 2025-2026

B.Sc. Other than Mathematics (Minor Course)
SEMESTER-II
Course Code: MATH-MI-T-02
Course title: Algebra & Analytical Geometry
Session: 2025-2026

Semester – II			
Name of the teacher	**Unit**	**Subject**	**Classes**
Md. Meezanur Rahaman	**1**	● Complex Numbers: De Moivre's theorem and its applications. Exponential, Sine, Cosine and Logarithm of a complex number. Definition of a^z. Inverse circular and hyperbolic functions. Polynomials: Fundamental theorem of algebra (Statement only). Polynomials with real coefficients, nature of roots of an equation (surd or complex roots occur in pairs). Statement of Descartes rule of signs and its applications.	15
Dr. Sarifuddin	**2**	● Transformations of rectangular axes: Translation, rotation and their combinations. Invariants. ● General equation of second degree in x and y: Reduction to canonical forms. Classification of conics. ● Pair of straight lines: Condition that the general equation of 2nd degree in x and y may represent two straight lines. Point of intersection of two intersecting straight lines. Angle between two lines given by ax2+2hxy+by2=0. Equation of bisectors. Equation of two lines joining the origin to the points in which a line meets a conic.	15
Babulal Tudu	**2**	● Polar equation of straight lines and circles. Polar equation of a conic refers to a focus as a pole. Equation of chord joining two points. Equations of tangents and normal. ● Sphere and its tangent planes. Right circular cone.	15

Ariful Islam	**1**	● Rank of a matrix: Determination of rank either by considering minors or by sweep-out process. Consistency and solution of a system of linear equations (not more than 3 variables) by matrix method.	10
Gaurab Mitra	**1**	● Equivalence relations and partitions. Functions, composition of functions, invertible functions, one to one correspondence and cardinality of a set ● Definition and elementary properties of groups. Concepts of permutation Group, alternating group, finite groups: S_3, V_4. The group Z_n of integers under addition modulo n.	10
Bilkis Khatun	**1**	Polynomials: Relation between roots and coefficients, transformations of equations. Cardan's method of solution of a cubic equation.	8
	II	● Order of an element, order of a group, subgroups and examples of subgroups.	7