Vision of the Institute

- To provide outstanding education and training to our learners to achieve their goals.
- To reach out to the unreached.
- To forge institutional, departmental and individual linkage with society.
- To turn the college into a nodal facilitating centre for inclusive and sustainable development of the region.

Mission of the Institute

- To impart quality education to the learners.
- To create better academic environment in order to produce competent and industrious human resource.
- To provide student- centered academic and personal enrichment opportunities to enhance lifelong learning.
- To make education more relevant in the global perspective.
- To expand and accommodate with the changing traits of higher education.

Programme Outcomes

Programme Name: Bachelor in Science

- Scientific temper will be developed in Students.
- Students will acquire basic Practical skills & Technical knowledge along with domain knowledge of different subjects in the science stream.
- Students will become employable; they will be eligible for career opportunities in Industry, or will be able to opt for entrepreneurship.
- Students will possess basic subject knowledge required for higher studies, professional and applied courses like Management Studies, IT etc.
- Students will be aware of and able to develop solution oriented approach towards various Social and Environmental issues.

Department of Mathematics
Nalbari College, Nalbari

Programme Specific Outcome (B. Sc Mathematics Honours and Generic/Regular)

The Completion of the B. Sc Mathematics Program shall enable a student to:

1. Communicate Mathematics effectively by oral, written, computational and graphic means.
2. Create Mathematical ideas from basic axioms.
3. Gauge the hypothesis, theories, techniques and proofs provisionally.
4. Utilize Mathematics to solve theoretical and applied problems by critical understanding, analysis and synthesis.
5. Identify applications of Mathematics in other disciplines and in the real world, leading to enhancement of career prospects in a plethora of fields.
6. Appreciate the requirement of lifelong learning through continued education and research.

COURSE OUTCOMES

1st Semester (Honours Courses)

Paper Name: **Calculus** (Including Practical)

Paper Code: MAT-HC-1016

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
This course will enable the students to: i) Learn first and second derivative tests for relative extremum and apply the knowledge in problems in business, economics and life sciences. ii) Sketch curves in a plane using its mathematical properties in different coordinate systems. iii) Compute area of surfaces of revolution and the volume of solids by integrating over cross-sectional areas. iv) Understand the calculus of vector functions and its use to develop the basic principles of planetary motion.	Unit 1: Higher order derivatives, Leibnitz's rule and its application. Concavity and inflection points, asymptotes, curve tracing in Cartesian coordinates, tracing in polar coordinates of standard curves, L-Hopital's rule, applications in business, economics and life sciences.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Reduction formulae for integration and its derivation. Volumes by slicing, disks and washers' methods, volumes by cylindrical shells,	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

	parametric equations, parameterizing a curve, arc length, arc length of parametric curves, area of surface of revolution.		
	Unit 3: Triple product, introduction to vector functions, operations with vector-valued functions, limits and continuity of vector functions, differentiation and integration of vector functions, tangent and normal components of acceleration, modelling ballistics and planetary motion, Kepler's second law.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

Paper Name: **Algebra**

Paper Code: MAT-HC-1026

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
This course will enable the students to: i) Employ De Moivre's theorem in a number of applications to solve numerical problems. ii) Learn about equivalent classes and cardinality of a set. iii) Use modular arithmetic and basic properties of congruences. iv) Recognize consistent and inconsistent systems of linear equations by the row echelon form of the augmented matrix. v) Learn about the solution sets of linear systems using matrix method and Cramer's rule	Unit 1: Polar representation of complex numbers, n th roots of unity, De Moivre's theorem and its applications.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Mathematical logic, sets, functions.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Relations, Induction principles, GCD of integers	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 4: Linear equations, solution sets of linear system, matrix and it's applications.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

2nd Semester (Honours Courses)

Paper Name: **Real analysis**

Paper Code: MAT-HC-2016

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
This course will enable the students to: i) Understand many properties of the real line R, including completeness and Archimedean properties. ii) Learn to define sequences in terms of functions from N to a subset of R. iii) Recognize bounded, convergent, divergent, Cauchy and monotonic sequences and to calculate their limit superior, limit inferior, and the limit of a bounded sequence.	Unit 1: Algebraic and order properties of R, absolute value and real line, bounded sets, supremum and infimum, completeness property of R, the Archimedean property, the density theorem, intervals, nested interval theorem.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Real sequences and its convergence, limit and its theorems, Cauchy sequences, Cauchy's convergence criterion.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Infinite series and its convergence, Cauchy criterion, Tests for convergence.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

Paper Name: **Differential Equations** (Including Practical)

Paper Code: MAT-HC-2026

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
The course will enable the students to: i) Learn basics of differential equations and mathematical modeling. ii) Formulate differential equations for various mathematical models. iii) Solve first order non-linear differential equations and linear differential equations of higher order usingvarious techniques. iv) Apply these techniques to solve and analyze various mathematical models.	Unit 1: Basics of Mathematical Model, solution of 1st order differential equations, various types of 1st order differential equations and finding its solutions.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Introduction and analysis of different mathematical models using differential equations.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Solutions of 2nd order differential equations, Wronskian, linear homogeneous and non homogeneous equations of higher order with constant coefficients.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

3rd Semester (Honours)

Paper Name: **Theory of Real functions**

Paper Code: MAT-HC-3016

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
This course will enable the students to: i) Have a rigorous understanding of the concept of limit of a function. ii) Learn about continuity and uniform continuity of functions defined on intervals. iii) Understand geometrical properties	Unit 1: Limit point of sets, limits of functions and its related various theorems and definitions.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

of continuous functions on closed and bounded intervals. iv) Learn extensively about the concept of differentiability using limits, leading to a better understanding for applications.	Unit 2: Continuous functions and related theorems, uniform continuity.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit3: Differentiability of a function and related theorems, Taylor's theorem and applications to inequalities, Taylor's series expansion.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

Paper Name: **Group Theory-1**

Paper Code: MAT-HC-3026

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
The course will enable the students to: i) Recognize the mathematical objects that are groups, and classify them as abelian, cyclic and permutationgroups, etc. ii) Link the fundamental concepts of groups and symmetrical figures. iii) Analyze the subgroups of cyclic groups and classify subgroups of cyclic groups. iv) Explain the significance of the notion of cosets, normal subgroups and factor groups. v) Learn about Lagrange's theorem and Fermat's Little theorem. vi) Know about group homomorphisms and group isomorphisms.	Unit 1: Definition and examples of group, subgroups, cyclic groups.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Permutations, Lagrange's theorem, normal subgroups and factor groups.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Group homomorphism and related theorems.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

Paper Name: **Analytical Geometry**

Paper Code: MAT-HC-3036

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method

This course will enable the students to: i) Learn conic sections and transform co-ordinate systems ii) Learn polar equation of a conic, tangent, normal and properties iii) Have a rigorous understanding of the concept of three dimensional coordinates system.	Unit 1: Transformation of co-ordinates, pair of straight lines, different types of conics with general form.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Plane, sphere, cone, cylinder, central conicoid, ellipsoid, hyperboloid of one and two sheets, diametral planes, tangent lines, director sphere, polar plane, section with a given center.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

4th Semester (Honours)

Paper Name: **Multivariate Calculus**

Paper Code: MAT-HC-4016

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
This course will enable the students to: i) Learn the conceptual variations when advancing in calculus from one variable to multivariable discussion. ii) Understand the maximization and minimization of multivariable functions subject to the given constraints iii) Learn about inter-relationship amongst the line integral, double and triple integral formulations. iv) Familiarize with Green's, Stokes' and Gauss divergence theorems.	Unit 1: Functions of several variables, limit, continuity, partial derivatives, chain rule, level curves, tangent, gradient, directional derivative, total differential.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Extrema of functions of several variables	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Double and triple integration, volume, area, surface area by it.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 4: Line , surface integral. Green, Stokes, Divergence theorem and applications.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

Paper Name: **Numerical Methods (Including Practical)**

Paper Code: MAT-HC-4026

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
The course will enable the students to: i) Learn some numerical methods to find the zeroes of nonlinear functions of a single variable and solution of a system of linear equations, up to a certain given level of precision. ii) Know about methods to solve system of linear equations, such as False position method, Fixed point iteration method, Newton's method, Secant method and LU decomposition. iii) Interpolation techniques to compute the values for a tabulated function at points not in the table. iv) Applications of numerical differentiation and integration to convert differential equations into difference equations for numerical solutions.	Unit 1: Algorithms, convergence, Solution of system of equations by different methods, LU decomposition	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Lagrange and Newton interpolation, finite difference operators.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Numerical differentiation and integration. Trapezoidal, Simpson's and Euler's rule.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

Paper Name: **Ring Theory**

Paper Code: MAT-HC-4036

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
This course will enable the students to: i) appreciate the significance of unique factorization in rings and integral domains ii) learn about fundamental concepts of ring, integral domains and fields. iii) know about ring homomorphism and isomorphisms theorems of rings. iv)learn about polynomial rings over commutative rings and about UFD.	Unit 1: Definition, examples and properties of rings, sub ring, ideal, integral domains, fields. Isomorphisms and homomorphisms of rings and related theorems.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Polynomial rings over commutative rings, division algorithm, principal and prime ideals, UFD and Euclidean domains, divisibility in integral domains.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

4th Semester (Honours)

Paper Name: **Multivariate Calculus**

Paper Code: MAT-HC-4016

Course Outcome	Unit No. and Name	Teaching Methodology	Assessment Method
This course will enable the students to: i) Learn the conceptual variations when advancing in calculus from one variable to multivariable discussion. ii) Understand the maximization and minimization of multivariable functions subject to the given constraints iii) Learn about inter-relationship amongst the line integral, double and triple integral formulations. iv) Familiarize with Green's, Stokes' and Gauss divergence theorems.	Unit 1: Functions of several variables, limit, continuity, partial derivatives, chain rule, level curves, tangent, gradient, directional derivative, total differential.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Extrema of functions of several variables	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Double and triple integration, volume, area, surface area by it.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 4: Line , surface integral. Green, Stokes, Divergence theorem and applications.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

5th Semester (Honours)

Paper Name: **Complex Analysis (Including Practical)**

Paper Code: MAT-HC-5016

Course Outcome	Unit No. and Name	Teaching Methodology	Assessment Method
The course will enable the students to: i) Learn the significance of differentiability of complex functions leading to the understanding ofCauchy–Riemann equations.	Unit 1: Function of a complex variable. Limit, continuity, differentiability of complex numbers. Cauchy Riemann equations.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
ii) Learn some elementary functions and can evaluate the contour integrals. iii)Understand the role of Cauchy–Goursat theorem and the Cauchy integral formula and their applications in evaluating complex	Unit 2: Analytic functions, harmonic functions, exponential, logarithmic and trigonometric functions, derivative and definite integral of functions.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

integrals.			
	Unit 3: Contours, contour integrals and examples	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 4: Antiderivative, Cauchy-Goursat theorem, Cauchy integral formula, Liouville's theorem and fundamental theorem of algebra.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

Paper Name: **Linear Algebra**

Paper Code: MAT-HC-5026

Course Outcome	Unit No. and Name	Teaching Methodology	Assessment Method
The course will enable the students to: i)Learn about the concept of linear independence of vectors over a field, dimension of a vector space. ii) Basic concepts of linear transformations, dimension theorem, matrix representation of LT and change of co-ordinate matrix. iii) Compute characteristic polynomial, eigen values, eigen vectors, eigen space. Apply basic diagonalization results. iv) Compute inner products and determine orthogonality on vector spaces.	Unit 1: Vector spaces, subspaces, null and column space, linear transformations, kernel, range, base, dimension, rank of vector space, change of basis.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Eigen vectors and eigen values of a matrix, the characteristics equation, diagonalization, eigen vectors of a LT, complex eigen values. Invariant subspaces and Caley Hamilton theorem.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Inner product, length, orthogonality, orthogonal sets and projections. Gram Schmidt process, inner product space. Diagonalization of symmetric matrices and spectral theorem.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

Paper Name: **Number Theory**

Paper Code: MAT-HE-5016

Course Outcome	Unit No. and Name	Teaching Methodology	Assessment Method

This course will enable the students to: i) Learn about some fascinating discoveries related to the properties of prime numbers, and some of the open problems in number theory, viz., Goldbach conjecture etc. ii) Know about number theoretic functions and modular arithmetic. iii) Solve linear, quadratic and system of linear congruence equations.	Unit 1: Linear Diophantine equation, prime counting function, Goldbach conjecture, linear congruence, residue, dhinese remainder theorem, Fermat's Little theorem, Wilson's theorem.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Number theoretic functions, sum and number of divisors, totally multiplicative functions, definition and properties of Dirichlet product, Mobius inversion formula, the greatest integer function, Euler's phi function, Euler's theorem, residue.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

Paper Name: **Programming in C (Including Practical)**

Paper Code: MAT-HE-5066

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
The course will enable the students to: i) Understand and apply the programming concepts of C which is important to mathematical investigation and problem solving. ii) Learn about structured data types in C and learn aboutdifferent applications iii)Represent the outputs of programs visually in terms of well formatted text and plots. iv) Practical will enable the students to create and evaluate different problems using C	Unit 1: Variables, constants, different terms related to C and its library functions, structure of a C program, input/output functions and statements.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Control statements, if-else statements, switch statement.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Arrays and subscripted variables, function, function declaration, actual and formal arguments, function prototype, recursive function.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

6th Semester (Honours)

Paper Name: **Riemann Integration and Metric spaces**

Paper Code: MAT-HC-6016

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
The course will enable the students to: i) Learn about some of the classes and properties of Riemann integrable functions, and the applications of the Fundamental theorems of integration. ii) Know about improper integrals including, beta and gamma functions. iii) Learn various natural and abstract formulations of distance on the sets of usual or unusual entities. Become aware one such formulations leading to metric spaces. iv) Analyse how a theory advances from a particular frame to a general frame. v) Appreciate the mathematical understanding of various geometrical concepts, viz. Balls or connected sets etc. in an abstract setting.	Unit 1: Riemann integration concepts and some related theorems. Concepts of improper integrals, Gamma functions.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Metric spaces, definition, examples sequence and Cauchy sequence, open and closed ball, complete metric space, subspace, dense and separable space.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Continuous mappings, sequential criterion, uniform continuity, homeomorphism, contraction mapping, connectedness.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

Paper Name: **Partial Differential Equations (Including practical)**

Paper Code: MAT-HC-6026

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
The course will enable the students to: i) Formulate, classify and transform first order PDEs into canonical form. ii) Learn about method of characteristics and separation of variables to solve first order PDE's. iii) Classify and solve second order linear PDEs. iv) Learn about Cauchy problem for second order PDE and homogeneous as well as non-homogeneous wave equations.	Unit 1: Introduction, classification, construction of first order PDE, Cauchy problem, Integral surface, Cauchy, Charpit and Jacobi's method of solution.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Canonical form of 1st order PDE, Method of separation of variables	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Reduction to canonical forms, equations with constant co-efficients, general solution.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

Paper Name: **Project Paper**

Paper Code: MAT-HE-6086

COURSE OUTCOMES (Generic and Regular Courses)

1st Semester

Paper Name: **Calculus**

Paper Code: MAT-HG-1016/ MAT-RC-1016

Course Outcome	Unit No. and Name	Teaching Methodology	Assessment Method
Completion of the course will enable the students to: i) Understand continuity and differentiability in terms of limit. ii) Describe asymptotic behaviour in terms of limit involving infinity. iii) Understand importance of Mean value theorems. iv) Use derivative to explore behavior of a function and graphing it.	Unit 1: Graph of different functions	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Limits and continuity of functions, properties of continuous functions, intermediate value theorem.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Differentiability, successive differentiation, Leibnitz theorem, higher order derivatives.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 4: Rolle's Theorem, Lagrange's mean value theorem, geometrical interpretation and application, Taylor;s theorem, Maclaurin's theorem,	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 5: Functions of two and more variables, level curves, partial differentiation.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

2nd Semester

Paper Name: **Algebra**

Paper Code: MAT-HG-2016/ MAT-RC-2016

Course Outcome	Unit No. and Name	Teaching Methodology	Assessment Method
The course will enable the students to: i) Learn to solve cubic and	Unit 1: Theory of equations, De Moivre's Theorem, roots of complex numbers.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

biquadratic equations. Also learn relation between the roots and coefficients and its uses. ii) Employ De Moivre's theorem in a number of applications. iii) Recognize consistent and inconsistent system of equations by row echelon form of matrix. Learn to find rank and inverse. iv) Learn basic ideas of group, subgroup, permutation group, cyclic group and preliminary knowledge of rings.	Unit 2: Matrices, algebra, row echelon and reduced row echelon form, inverse, rank, solution of system of equations.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Groups and rings. Permutation and cyclic groups.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

3rd Semester

Paper Name: **Differential Equations**

Paper Code: MAT-HG-3016/ MAT-RC-3016

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
This course will enable the students to: i)Learn basics of differential equations and it's applications ii) Learn to classify 1st order linear differential equations and different methods of solutions. iii) Learn to solve 2nd order linear homogeneous as well as non-homogeneous differential equations by different methods.	Unit 1: First order equations and methods of solutions, orthogonal and oblique trajectories, Wronskian and its properties.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Solutions of 2nd order linear homogeneous and non-homogeneous equations, Cauchy-Euler equations, simultaneous equations.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

4th Semester

Paper Name: **Real Analysis**

Paper Code: MAT-HG-4016/ MAT-RC-4016

Course Outcome	Unit No. and Name	Teaching Methodology	Assessment Method
This course will enable the students to: i) Understand many properties of real line R, including Archimedean and completeness properties. ii) Learn to define sequences in terms of functions from R to a	Unit 1: Algebraic and order properties of real numbers, open and closed sets. Limits and continuity of a function and their properties, uniform continuity.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

subset of R. iii) Recognize bounded, convergent, divergent, Cauchy and monotonic sequences and to calculate their limit superior, limit inferior and limits of bounded sequences. iv) Learn to apply different tests to test convergence of infinite series.	Unit 2: Sequences, convergent and Cauchy sequences, subsequences, limits of sequence. Infinite series and convergence.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

5th Semester

Paper Name: **Number Theory**

Paper Code: MAT-RE-5016

Course Outcome	Unit No. and Name	Teaching Methodology	Assessment Method
This course will enable the students to: i) Learn about some fascinating discoveries related to the properties of prime numbers, and some of the open problems in number theory, viz., Goldbach conjecture etc. ii) Know about number theoretic functions and modular arithmetic. iii) Solve linear, quadratic and system of linear congruence equations.	Unit 1: Linear Diophantine equation, prime counting function, Goldbach conjecture, linear congruence, residue, Chinese remainder theorem, Fermat's Little theorem, Wilson's theorem.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Number theoretic functions, sum and number of divisors, totally multiplicative functions, definition and properties of Dirichlet product, Mobius inversion formula, the greatest integer function, Euler's phi function, Euler's theorem, residue.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

6th Semester

Paper Name: **Numerical Analysis**

Paper Code: MAT-RE-6016

Course Outcome	Unit No. and Name	Teaching Methodology	Assessment Method

This course will enable the students to: i) Learn some numerical methods to find the zeroes of nonlinear functions of a single variable and solution of a system of linear equations, up to a certain given level of precision. ii) Know about iterative and non-iterative methods to solve system of linear equations. iii) Know interpolation techniques to compute the values for a tabulated function at points not in the table. iv) Integrate a definite integral that cannot be done analytically. v) Find numerical differentiation of functional values. vi) Solve differential equations that cannot be solved by analytical methods.	Unit 1: Gaussian elimination method (with row pivoting), Gauss-Jordan method; Iterative methods: Jacobi method, Gauss-Seidel method; Interpolation: Lagrange form, Newton form, Finite difference operators, Gregory-Newton forward and backward difference interpolations, Piecewise polynomial interpolation (Linear and Quadratic).	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Numerical differentiation: First and second order derivatives; Numerical integration: Trapezoid rule, Simpson's rule; Extrapolation methods: Richardson extrapolation, Romberg integration; Ordinary differential equation: Euler's method, Modified Euler's methods (Heun and Mid-point).	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

Department of Mathematics
Nalbari College, Nalbari

Programme Specific Outcome (B. Sc Mathematics Honours and Generic/Regular)

The Completion of the B. Sc Mathematics Program shall enable a student to:

1. Communicate Mathematics effectively by oral, written, computational and graphic means.
2. Create Mathematical ideas from basic axioms.
3. Gauge the hypothesis, theories, techniques and proofs provisionally.
4. Utilize Mathematics to solve theoretical and applied problems by critical understanding, analysis and synthesis.
5. Identify applications of Mathematics in other disciplines and in the real world, leading to enhancement of career prospects in a plethora of fields.
6. Appreciate the requirement of lifelong learning through continued education and research.

COURSE OUTCOMES

1st Semester (Honours Courses)

Paper Name: **Calculus** (Including Practical)

Paper Code: MAT-HC-1016

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
This course will enable the students to: i) Learn first and second derivative tests for relative extremum and apply the knowledge in problems in business, economics and life sciences. ii) Sketch curves in a plane using its mathematical properties in different coordinate systems. iii) Compute area of surfaces of revolution and the volume of solids by integrating over cross-sectional areas. iv) Understand the calculus of vector functions and its use to develop the basic principles of planetary motion.	Unit 1: Higher order derivatives, Leibnitz's rule and its application. Concavity and inflection points, asymptotes, curve tracing in Cartesian coordinates, tracing in polar coordinates of standard curves, L-Hopital's rule, applications in business, economics and life sciences.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Reduction formulae for integration and its derivation. Volumes by slicing, disks and washers' methods, volumes by cylindrical shells, parametric equations, parameterizing a curve, arc length, arc length of parametric curves, area of surface of revolution.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Triple product, introduction to vector functions, operations with vector-valued functions, limits and continuity of vector functions, differentiation and integration of vector functions, tangent and normal components of acceleration, modelling ballistics and planetary motion, Kepler's second law.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

Paper Name: **Algebra**

Paper Code: MAT-HC-1026

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
This course will enable the students to: i) Employ De Moivre's theorem in a number of applications to solve numerical problems. ii) Learn about equivalent classes and cardinality of a set. iii) Use modular arithmetic and basic properties of congruences. iv) Recognize consistent and inconsistent systems of linear equations by the row echelon form of the augmented matrix. v) Learn about the solution sets of linear systems using matrix method and Cramer's rule	Unit 1: Polar representation of complex numbers, n th roots of unity, De Moivre's theorem and its applications.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Mathematical logic, sets, functions.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Relations, Induction principles, GCD of integers	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 4: Linear equations, solution sets of linear system, matrix and it's applications.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

2nd Semester (Honours Courses)

Paper Name: **Real analysis**

Paper Code: MAT-HC-2016

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
This course will enable the students to: i) Understand many properties of the real line R, including completeness and Archimedean properties. ii) Learn to define sequences in terms of functions from N to a subset of R. iii) Recognize bounded, convergent, divergent, Cauchy and monotonic sequences and to calculate their limit superior, limit inferior, and the limit of a bounded sequence.	Unit 1: Algebraic and order properties of R, absolute value and real line, bounded sets, supremum and infimum, completeness property of R, the Archimedean property, the density theorem, intervals, nested interval theorem.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Real sequences and its convergence, limit and its theorems, Cauchy sequences, Cauchy's convergence criterion.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Infinite series and its convergence, Cauchy criterion, Tests for convergence.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

Paper Name: **Differential Equations** (Including Practical)

Paper Code: MAT-HC-2026

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
The course will enable the students to: i) Learn basics of differential equations and mathematical modeling. ii) Formulate differential equations for various mathematical models. iii) Solve first order non-linear differential equations and linear differential equations of higher order usingvarious techniques. iv) Apply these techniques to solve and analyze various mathematical models.	Unit 1: Basics of Mathematical Model, solution of 1^{st} order differential equations, various types of 1^{st} order differential equations and finding its solutions.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Introduction and analysis of different mathematical models using differential equations.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Solutions of 2^{nd} order differential equations, Wronskian, linear homogeneous and non homogeneous equations of higher order with constant coefficients.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

3rd Semester (Honours)

Paper Name: **Theory of Real functions**

Paper Code: MAT-HC-3016

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
This course will enable the students to: i) Have a rigorous understanding of the concept of limit of a function. ii) Learn about continuity and uniform continuity of functions defined on intervals. iii) Understand geometrical properties of continuous functions on closed and bounded intervals. iv) Learn extensively about the concept of differentiability using limits, leading to a better understanding for applications.	Unit 1: Limit point of sets, limits of functions and its related various theorems and definitions.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Continuous functions and related theorems, uniform continuity.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit3: Differentiability of a function and related theorems, Taylor's theorem and applications to inequalities, Taylor's series expansion.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

Paper Name: **Group Theory-1**

Paper Code: MAT-HC-3026

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
The course will enable the students to: i) Recognize the mathematical objects that are groups, and classify them as abelian, cyclic and permutationgroups, etc. ii) Link the fundamental concepts of groups and symmetrical figures. iii) Analyze the subgroups of cyclic groups and classify subgroups of cyclic groups. iv) Explain the significance of the notion of cosets, normal subgroups and factor groups. v) Learn about Lagrange's theorem and Fermat's Little theorem. vi) Know about group homomorphisms and group isomorphisms.	Unit 1: Definition and examples of group, subgroups, cyclic groups.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Permutations, Lagrange's theorem, normal subgroups and factor groups.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Group homomorphism and related theorems.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

Paper Name: **Analytical Geometry**

Paper Code: MAT-HC-3036

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
This course will enable the students to: i) Learn conic sections and transform co-ordinate systems ii) Learn polar equation of a conic, tangent, normal and properties iii) Have a rigorous understanding of the concept of three dimensional coordinates system.	Unit 1: Transformation of co-ordinates, pair of straight lines, different types of conics with general form.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Plane, sphere, cone, cylinder, central conicoid, ellipsoid, hyperboloid of one and two sheets, diametral planes, tangent lines, director sphere, polar plane, section with a given center.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

4th Semester (Honours)

Paper Name: **Multivariate Calculus**

Paper Code: MAT-HC-4016

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
This course will enable the students to: i) Learn the conceptual variations when advancing in calculus from one variable to multivariable discussion. ii) Understand the maximization and minimization of multivariable functions subject to the given constraints iii) Learn about inter-relationship amongst the line integral, double and triple integral formulations. iv) Familiarize with Green's, Stokes' and Gauss divergence theorems.	Unit 1: Functions of several variables, limit, continuity, partial derivatives, chain rule, level curves, tangent, gradient, directional derivative, total differential.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Extrema of functions of several variables	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Double and triple integration, volume, area, surface area by it.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 4: Line , surface integral. Green, Stokes, Divergence theorem and applications.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

Paper Name: **Numerical Methods (Including Practical)**

Paper Code: MAT-HC-4026

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
The course will enable the students to: i) Learn some numerical methods to find the zeroes of nonlinear functions of a single variable and solution of a system of linear equations, up to a certain given level of precision. ii) Know about methods to solve system of linear equations, such as False position method, Fixed point iteration method, Newton's method, Secant method and LU decomposition. iii) Interpolation techniques to compute the values for a tabulated function at points not in the table. iv) Applications of numerical differentiation and integration to convert differential equations into difference equations for numerical solutions.	Unit 1: Algorithms, convergence, Solution of system of equations by different methods, LU decomposition	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Lagrange and Newton interpolation, finite difference operators.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Numerical differentiation and integration. Trapezoidal, Simpson's and Euler's rule.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

Paper Name: **Ring Theory**

Paper Code: MAT-HC-4036

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
This course will enable the students to: i) appreciate the significance of unique factorization in rings and integral domains ii) learn about fundamental concepts of ring, integral domains and fields. iii) know about ring homomorphism and isomorphisms theorems of rings. iv)learn about polynomial rings over commutative rings and about UFD.	Unit 1: Definition, examples and properties of rings, sub ring, ideal, integral domains, fields. Isomorphisms and homomorphisms of rings and related theorems.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Polynomial rings over commutative rings, division algorithm, principal and prime ideals, UFD and Euclidean domains, divisibility in integral domains.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

4th Semester (Honours)

Paper Name: **Multivariate Calculus**

Paper Code: MAT-HC-4016

Course Outcome	Unit No. and Name	Teaching Methodology	Assessment Method
This course will enable the students to: i) Learn the conceptual variations when advancing in calculus from one variable to multivariable discussion. ii) Understand the maximization and minimization of multivariable functions subject to the given constraints iii) Learn about inter-relationship amongst the line integral, double and triple integral formulations. iv) Familiarize with Green's, Stokes' and Gauss divergence theorems.	Unit 1: Functions of several variables, limit, continuity, partial derivatives, chain rule, level curves, tangent, gradient, directional derivative, total differential.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Extrema of functions of several variables	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Double and triple integration, volume, area, surface area by it.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 4: Line , surface integral. Green, Stokes, Divergence theorem and applications.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

5th Semester (Honours)

Paper Name: **Complex Analysis (Including Practical)**

Paper Code: MAT-HC-5016

Course Outcome	Unit No. and Name	Teaching Methodology	Assessment Method
The course will enable the students to: i) Learn the significance of differentiability of complex functions leading to the understanding ofCauchy–Riemann equations.	Unit 1: Function of a complex variable. Limit, continuity, differentiability of complex numbers. Cauchy Riemann equations.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
ii) Learn some elementary functions and can evaluate the contour integrals. iii)Understand the role of Cauchy–Goursat theorem and the Cauchy integral formula and their applications in evaluating complex integrals.	Unit 2: Analytic functions, harmonic functions, exponential, logarithmic and trigonometric functions, derivative and definite integral of functions.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Contours, contour integrals and examples	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 4: Antiderivative, Cauchy-Goursat theorem, Cauchy integral formula, Liouville's theorem and fundamental theorem of algebra.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

Paper Name: **Linear Algebra**

Paper Code: MAT-HC-5026

Course Outcome	Unit No. and Name	Teaching Methodology	Assessment Method
The course will enable the students to: i)Learn about the concept of linear independence of vectors over a field, dimension of a vector space. ii) Basic concepts of linear transformations, dimension theorem, matrix representation of LT and change of co-ordinate matrix. iii) Compute characteristic polynomial, eigen values, eigen vectors, eigen space. Apply basic diagonalization results. iv) Compute inner products and determine orthogonality on vector spaces.	Unit 1: Vector spaces, subspaces, null and column space, linear transformations, kernel, range, base, dimension, rank of vector space, change of basis.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Eigen vectors and eigen values of a matrix, the characteristics equation, diagonalization, eigen vectors of a LT, complex eigen values. Invariant subspaces and Caley Hamilton theorem.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Inner product, length, orthogonality, orthogonal sets and projections. Gram Schmidt process, inner product space. Diagonalization of symmetric matrices and spectral theorem.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

Paper Name: Number Theory

Paper Code: MAT-HE-5016

Course Outcome	Unit No. and Name	Teaching Methodology	Assessment Method
This course will enable the students to: i) Learn about some fascinating discoveries related to the properties of prime numbers, and some of the open problems in number theory, viz., Goldbach conjecture etc. ii) Know about number theoretic functions and modular arithmetic. iii) Solve linear, quadratic and system of linear congruence equations.	Unit 1: Linear Diophantine equation, prime counting function, Goldbach conjecture, linear congruence, residue, dhinese remainder theorem, Fermat's Little theorem, Wilson's theorem.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Number theoretic functions, sum and number of divisors, totally multiplicative functions, definition and properties of Dirichlet product, Mobius inversion formula, the greatest integer function, Euler's phi function, Euler's theorem, residue.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

Paper Name: **Programming in C (Including Practical)**

Paper Code: MAT-HE-5066

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
The course will enable the students to: i) Understand and apply the programming concepts of C which is important to mathematical investigation and problem solving. ii) Learn about structured data types in C and learn aboutdifferent applications iii)Represent the outputs of programs visually in terms of well formatted text and plots. iv) Practical will enable the students to create and evaluate different problems using C	Unit 1: Variables, constants, different terms related to C and its library functions, structure of a C program, input/output functions and statements.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Control statements, if-else statements, switch statement.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Arrays and subscripted variables, function, function declaration, actual and formal arguments, function prototype, recursive function.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

6th Semester (Honours)

Paper Name: **Riemann Integration and Metric spaces**

Paper Code: MAT-HC-6016

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
The course will enable the students to: i) Learn about some of the classes and properties of Riemann integrable functions, and the applications of the Fundamental theorems of integration. ii) Know about improper integrals including, beta and gamma functions. iii) Learn various natural and abstract formulations of distance on the sets of usual or unusual entities. Become aware one such formulations leading to metric spaces. iv) Analyse how a theory advances from a particular frame to a general frame. v) Appreciate the mathematical understanding of various geometrical concepts, viz. Balls or connected sets etc. in an abstract setting.	Unit 1: Riemann integration concepts and some related theorems. Concepts of improper integrals, Gamma functions.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Metric spaces, definition, examples sequence and Cauchy sequence, open and closed ball, complete metric space, subspace, dense and separable space.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Continuous mappings, sequential criterion, uniform continuity, homeomorphism, contraction mapping, connectedness.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

Paper Name: **Partial Differential Equations (Including practical)**

Paper Code: MAT-HC-6026

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
The course will enable the students to: i) Formulate, classify and transform first order PDEs into canonical form. ii) Learn about method of characteristics and separation of variables to solve first order PDE's. iii) Classify and solve second order linear PDEs. iv) Learn about Cauchy problem for second order PDE and homogeneous as well as non-homogeneous wave equations.	Unit 1: Introduction, classification, construction of first order PDE, Cauchy problem, Integral surface, Cauchy, Charpit and Jacobi's method of solution.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Canonical form of 1st order PDE, Method of separation of variables	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Reduction to canonical forms, equations with constant co-efficients, general solution.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

Paper Name: **Project Paper**

Paper Code: MAT-HE-6086

In this paper students are encouraged to select a topic of their interest from our UG syllabus to prepare a small report. All the students are assigned a mentor to carry out the same. Further, seminars are hold with the guidance of their respective mentors every month to assess their progress. In a way, the project paper helps our students to get a rough idea about how researches are carried out in various fields of Mathematics, thereby encouraging them to pursue PhD.

COURSE OUTCOMES (Generic and Regular Courses)

1st Semester

Paper Name: **Calculus**

Paper Code: MAT-HG-1016/ MAT-RC-1016

Course Outcome	Unit No. and Name	Teaching Methodology	Assessment Method
Completion of the course will enable the students to: i) Understand continuity and differentiability in terms of limit. ii) Describe asymptotic behaviour in terms of limit involving infinity. iii) Understand importance of Mean value theorems. iv) Use derivative to explore behavior of a function and graphing it.	Unit 1: Graph of different functions	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Limits and continuity of functions, properties of continuous functions, intermediate value theorem.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Differentiability, successive differentiation, Leibnitz theorem, higher order derivatives.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 4: Rolle's Theorem, Lagrange's mean value theorem, geometrical interpretation and application, Taylor;s theorem, Maclaurin's theorem,	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 5: Functions of two and more variables, level curves, partial differentiation.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

2nd Semester

Paper Name: **Algebra**

Paper Code: MAT-HG-2016/ MAT-RC-2016

Course Outcome	Unit No. and Name	Teaching Methodology	Assessment Method
The course will enable the students to: i) Learn to solve cubic and biquadratic equations. Also learn relation between the roots and coefficients and its uses. ii) Employ De Moivre's theorem in a number of applications. iii) Recognize consistent and inconsistent system of equations by row echelon form of matrix. Learn to find rank and inverse. iv) Learn basic ideas of group, subgroup, permutation group, cyclic group and preliminary knowledge of rings.	Unit 1: Theory of equations, De Moivre's Theorem, roots of complex numbers.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Matrices, algebra, row echelon and reduced row echelon form, inverse, rank, solution of system of equations.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 3: Groups and rings. Permutation and cyclic groups.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

3rd Semester

Paper Name: **Differential Equations**

Paper Code: MAT-HG-3016/ MAT-RC-3016

Course Outcome	Unit no. and Name	Teaching Methodology	Assessment Method
This course will enable the students to: i)Learn basics of differential equations and it's applications ii) Learn to classify 1st order linear differential equations and different methods of solutions. iii) Learn to solve 2nd order linear homogeneous as well as non-homogeneous differential equations by different methods.	Unit 1: First order equations and methods of solutions, orthogonal and oblique trajectories, Wronskian and its properties.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Solutions of 2nd order linear homogeneous and non-homogeneous equations, Cauchy-Euler equations, simultaneous equations.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

4th Semester

Paper Name: **Real Analysis**

Paper Code: MAT-HG-4016/ MAT-RC-4016

Course Outcome	Unit No. and Name	Teaching Methodology	Assessment Method
This course will enable the students to: i) Understand many properties of real line R, including Archimedean and completeness properties. ii) Learn to define sequences in terms of functions from R to a subset of R. iii) Recognize bounded, convergent, divergent, Cauchy and monotonic sequences and to calculate their limit superior, limit inferior and limits of bounded sequences. iv) Learn to apply different tests to test convergence of infinite series.	Unit 1: Algebraic and order properties of real numbers, open and closed sets. Limits and continuity of a function and their properties, uniform continuity.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Sequences, convergent and Cauchy sequences, subsequences, limits of sequence. Infinite series and convergence.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

5th Semester

Paper Name: **Number Theory**

Paper Code: MAT-RE-5016

Course Outcome	Unit No. and Name	Teaching Methodology	Assessment Method
This course will enable the students to: i) Learn about some fascinating discoveries related to the properties of prime numbers, and some of the open problems in number theory, viz., Goldbach conjecture etc. ii) Know about number theoretic functions and modular arithmetic. iii) Solve linear, quadratic and system of linear congruence equations.	Unit 1: Linear Diophantine equation, prime counting function, Goldbach conjecture, linear congruence, residue, Chinese remainder theorem, Fermat's Little theorem, Wilson's theorem.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Number theoretic functions, sum and number of divisors, totally multiplicative functions, definition and properties of Dirichlet product, Mobius inversion formula, the greatest integer function, Euler's phi function, Euler's theorem, residue.	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

6th Semester

Paper Name: **Numerical Analysis**

Paper Code: MAT-RE-6016

Course Outcome	Unit No. and Name	Teaching Methodology	Assessment Method
This course will enable the students to: i) Learn some numerical methods to find the zeroes of nonlinear functions of a single variable and solution of a system of linear equations, up to a certain given level of precision. ii) Know about iterative and non-iterative methods to solve system of linear equations. iii) Know interpolation techniques to compute the values for a tabulated function at points not in the table. iv) Integrate a definite integral that cannot be done analytically. v) Find numerical differentiation of functional values. vi) Solve differential equations that cannot be solved by analytical methods.	Unit 1: Gaussian elimination method (with row pivoting), Gauss-Jordan method; Iterative methods: Jacobi method, Gauss-Seidel method; Interpolation: Lagrange form, Newton form, Finite difference operators, Gregory-Newton forward and backward difference interpolations, Piecewise polynomial interpolation (Linear and Quadratic).	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests
	Unit 2: Numerical differentiation: First and second order derivatives; Numerical integration: Trapezoid rule, Simpson's rule; Extrapolation methods: Richardson extrapolation, Romberg integration; Ordinary differential equation: Euler's method, Modified Euler's methods (Heun and Mid-point).	Interactive lectures, Problem solving sessions, PPT.	Assignments, Quizzes, Class tests

Contents of Course File

Dr. Dhanju Mani Pathak
Assistant Professor, Department of Chemistry

1. Vision & Mission of the Institute:

Vision:

- ✓ To provide outstanding education and training to our learners to achieve their goals.
- ✓ To reach out to the unreached.
- ✓ To forge institutional, departmental and individual linkage with society.
- ✓ To turn the college into a nodal facilitating centre for inclusive and sustainable development of the region.

Mission:

- ✓ To impart quality education to the learners.
- ✓ To create better academic environment in order to produce competent and industrious human resource.
- ✓ To Provide student- centered academic and personal enrichment opportunities to enhance lifelong learning.
- ✓ To make education more relevant in the global perspective.
- ✓ To expand and accommodte with the changing traits of higher education.

2. Program Outcomes (POs):

After completing B.Sc the students are expected to:

- ➢ Acquire the knowledge with the facts related to various subjects in pure sciences.
- ➢ Acquire the skills in handling scientific instruments and performing in laboratory experiments
- ➢ The skills of observations and inferences from the scientific experiments.
- ➢ Analyze the given scientific data systematically and the ability to draw the conclusions.
- ➢ Be able to think creatively to propose novel ideas.
- ➢ Understand the basic concepts, fundamental principles, and the scientific theories related to various scientific phenomena and their relevancies in the day-to-day life.
- ➢ Understand the issues of environmental contexts and sustainable development.
- ➢ Develop scientific outlook not only with respect to science subjects but also in all aspects related to life.
- ➢ Develop various communication skills such as reading, listening, speaking, etc., which will help in expressing ideas and views clearly and effectively.

- Develop elegance by participating in various social and cultural activities, in order to spread knowledge, creating awareness about the social problems, blind faith, etc.

3. Program Specific Outcomes (PSO): Attached separately

4. Course Outcomes (COs): Described in the teaching plan

5. Class Time Table: Attached separately

6. Academic Calendar: Attached separately

7. Syllabus: As per G. U syllabus (Attached separately)

8. Teaching method for each unit of the syllabus: Attached as Teaching Plan

9. Assessment method for each unit: Described in Teaching Plan

10. Lecture notes (Hand written/typed)

11. Consolidated attendance statement of students: Xerox copy of the attendance register

12. Consolidated semester grades of students

13. Result analysis

14. Sample copies of evaluated answer scripts of Class test, assignments, tutorials, lab records, Mid, End semester exams (Highest, average and marginal pass)

DEPARTMENT OF CHEMISTRY
NALBARI COLLEGE, NALBARI

Programme Specific Outcome

After successful completion of B.Sc. (CBCS) degree with Honours in Chemistry, a student will be able to acquire the following:

- Basic knowledge of Chemistry which they can apply in their future course of action.
- The Skill Enhancement Courses (SEC) help them to enrich their subject knowledge with reference to their practical applicability.
- Discipline Specific Courses (DSE) also broaden their domain of understanding the subject.
- Become eligible and competent enough to qualify various National level competitive examinations (viz. JAM, CUET etc.) necessary for entry to higher studies.
- Develop various relevant logical and analytical skill which are useful to serve their capabilities for academia, entrepreneurship and industry.
- Disciplined and confident enough to get absorbed in various employable sectors.

Time Table (Even Semester): 2023, Department of Chemistry, Nalbari College, Nalbari

Day	9.30-10.30	10.30-11.30	11.30-12.30	12.30-1.30	1.30-2.30	2.30-3.30	3.30-4.30	4.30-5.30	5.30-6-30
Mon DT: T=6,P=10	HC-2S-DP *HC-6S-Dessertaion* H.S practical---------ND	HC-4S-RS HC-6S-DT	SEC-4S-PS HC-2S Practical----------DP	HS-R7-PT HC-4S-PB HC-6S-PS	RE-6S-Dept-DP HC-6s Practical------DT HC-4sPractical--------RS RC-4S Practical------PT	RC/GE-2S-R9-PB	RC/GE 4S-R10-PT RC/GE-2S Practical--------RS		
Tue ND: T=6, P=10	HC-2S-RS HC-6S-PB H.S practical---------PS	HC-4S-ND HC-6S-DT HS1 –R10	SEC-4S-PS HC-2S Practical----------DP	HC-4S-RS HC-6S-ND RE-6S R8-PB	HC-6s Practical------DT HC-4sPractical--------RS RC-4S Practical------PT		HS-R7-PS RC/GE-2S Practical--------RS	RC/GE 4S-R10-PT	
Wed DP: T=8, P=10	HC-2S-PB HC-6S-DP H.S practical---------RS	HC-4S-DT HC-6S-PB RC/GE-2S-R7-ND	RC/GE 4S-R9-RS SEC-6S HC-2S Practical----------DT	HC-4S-DP *HC-6S Dessertation----------All*	HC-4sPractical--------DP	H.S -R7-PB	RE 6S practical-PB	SEC-4S practical-PS	
Thu RS: T=8, P=10	HC-2S-DT HC-6S-ND H.S practical---------PB	HC-4S-RS HC-6S-PS	RC/GE 4S-R7-DP SEC-6S HC-2S Practical----------DT	HC-4S-PB *HC-6S Dessertation----------All*	HC-4sPractical--------DP		RE 6S practical-PB	SEC-4S practical-PB	
Fri PS: T=8, P=10	RC/GE 2S-R10-PT HC-4S-PS HC-6S-RS H.S practical---------DT	HC-4S-DP HC-6S-ND	HC2S--DT HC-6S practical (DSE)------ND	H.S R10-PT HC-2S--RS	RE-6S-Dept-PB HC-4sPractical--------ND HC-6s Practical(HC)-----PS		GE4S practical---------PT GE2 S practical-------PB		
Sat PB: T=9, P=10 PT: T=6,P=08	HC-4S-ND *HC-6S-dessertation* H.S practical---------DP	RC/GE2S-R10-PT HC-4S-PS HC-6S-DT	HC2S--PB HC-6S practical (DSE)------ND	HC2S-DP HS-R10-RS	HC-4sPractical--------ND HC-6s Practical(HC)-----PS	RE-6S-R8-DP	GE4S practical---------PS GE2 S practical-------PT		

Time Table 2023 (Odd Semester)

Day	9..00-10.00	10.00-11.00	11.00-12.00	12.00-1.00	1.00-2.00	2.00-3.00	3.00-4.00	4.00-5.00
Mon	H.S2s Practical-ND	Ge/Re-3s-R9-PS HC-5s-DP	HS-2S-R7-RS HC-3S-PS RE-3s Practical HC-5s-PB RE-5S practical-	HC-3s-PB HC-5s-DT RE-5s-R8-ND	MDC-R10-RS HC-3s Practical-DP HC-5s Practical-PB		G1-Practical-ND HG-3s Practical-DP SEC 3s-PS	
Tues	HC-5s-ND H.S2s Practical-PS	HC-5s-RS	G1s (A)-R10-ND G1s (B)-SB-01-PB HC-3S-PS RE-3s Practical HC-5s-DT RE-5S practical-	HS1s-R9-ND HC-3s-RS HC-5s-PS RE-5s-R8-DP	HC-3s Practical-DP HC-5s Practical-PB	HS-2s-R7-PS	G1-Practical-ND HG-3s Practical-DP	
Wed	HS1s-R10-PB Ge/Re-3s-R9-DP HC-5s Practical-DT H.S2s Practical-RS		HC-3S-ND RC -3s Practical-PB RE-5S practical HC-5s-DP	RE-5s-R8-PS HC-3s-RS	MDC-R10-DP HC-3s Practical-DT HC-5s Practical-RS		HS-2s-R9-DP G1-Practical-PS SEC 3s-PB	
Thurs	HC-5s Practical-DT H.S2s Practical-PB	Ge/Re-3s-R7-PS	HC-3S-DP HC-5S-RS RC-3s Practical-PB RE-5S practical-PS	HS1s-R10-RS HC-3s-ND HC-5s-DT	SEC-1s –SB02-PB HC-3s Practical-DT HC-5s Practical-RS		G1-Practical-RS SEC 3s P-PS	HS-2s-R7-DT
Fri	HC-5s-PS H.S2s Practical-DT	HS1s-R7-ND HC-5s-PB	G1s (A)-SB01-DT G1s (B)-R10-PS HC-3S-DP RE-3s Practical HC-5s-RS RE-5S practical-	HS-2s-R7-PB HC-3s-RS RE-5s-R8-ND	MDC/SEC-1Sp-sb-02-PB HC-3s Practical-PS HC-5s Practical-ND		G1-Practical-PB	
Sat	HC-5s-ND Ge/Re-3s-R7-PB H.S2s Practical-DP	HC-5s-DT	G1s (A)-R7-DP G1s (B)-R10-RS HC-3S—DT HS1s-R9-PS	HC-5s-RS HC-3s-PB RE-5S practical-PS	SEC-1s-PB HC-3s Practical-PS HC-5s Practical-ND		G1-Practical-RS	

3.	September	1-2, 5, 7-9, 11-16, 18-23, 26-30	Working Days / Class Days	7	23	22	Freshmen Social during 1st week of September Commencement of Odd Semester's 1st sessional during 2nd week of September
		3, 10, 17, 24	Sunday				
		4	Holiday (Tithi of Sri Sri Madhabdeva)				
		6	Holiday (Janmastomi)				
		25	Holiday (Janmotsav of Srimanta Sankardeva)				
4.	October	3-7, 9-14, 16-17, 19	Working Days / Class Days	15	16	14	NCSU election & counting on 16th and 17th October
		1, 8, 15, 22, 29	Sunday				
		2	Holiday (Birthday of Mahatma Gandhi)				
		18	Holiday (Kati Bihu)				
		20 - 28	Holiday (Durga Puja / Lakshmi Puja)				
5.	November	1-4, 6-11, 14, 16-18, 20-23, 25, 28-30	Working days / Class Days	8	22	22	Odd semester 2nd sessional examination During 2nd week of November Conduct of examination for UG Courses (odd semester) as per GU notification
		5, 12, 19, 26	Sunday				
		12, 13	Holiday (Kali Puja & Dipawali)				
		15	Holiday (Bhatri Dwitiya)				
		19	Holiday (Chhat Puja)				
		24	Holiday (Lachit Divas)				
		27	Holiday (Guru Nanak's Birthday)				

Academic Calendar: 2023-2024
Nalbari College, Nalbari

(Up to December 2023)

Sl. No	Month/ Year	Dates	Working Day / Class Day / Examination Day / Holiday	No. of Holidays	No of Working Days	No of Teaching Days	Target Academic and other activities
1.	July	01-31	Summer Vacation	31			Celebration of foundation day of Nalbari College on 4th of July
		4	Foundation Day of College				
		01-23					Completion of admission process for all HS & undergraduate programmes (HS 1st Year & UG 1st semester)
2.	August	2-5, 7-12, 14, 16-17, 19, 21-26, 28-31	Working Days / Class Days	6	24	24	Completion of admission process for all postgraduate programmes (PG 1st semester) PNC memorial debate competition and Prof. Kandarpa Kalita memorial quiz competition during 2nd and 4th week of August Commencement of PG 1st semester classes from 3rd week of August
		1	Commencement of New Academic Session and Even Semester Classes				
		6, 13, 20, 27	Sunday				
		15	Independence Day				
		18	Holiday (Tithi of Srimanta Sankardev)				

4.	October 2022	11 - 15, 17, 19 - 22, 26, 28 - 29, 31	Working Days / Class Days	17	14	14	
		2, 9, 16, 23, 30	Sunday				
		01 - 10	Holiday (Durga Puja, Birthday of Mahatma Gandhi, Janmotsav of Srimanta Sankardev, Lakshmi Puja)				
		18	Holiday (Kati Bihu)				
		24 - 25	Holiday (Kali Puja & Dipawali)				
		27	Holiday (Bhai Dooj/Bhatri Dwitiya)				
		30	Holiday (Chhat Puja)				
5.	November 2022	1-5, 7, 9 - 12, 14 - 19, 21 - 23, 25 - 26, 28 - 30	Working Day / Class Day	6	24	24	Odd semester 2nd sessional examination during 2nd week of November 2022
		6, 13, 20, 27	Sunday				
		8	Holiday (Guru Nanak's Birthday)				
		24	Holiday (Lachit Divas)				
6.	December 2022	1, 3, 5 - 10, 12 - 17, 19 - 24	Working Days / Class Days	9	21	11	Odd semester final examination (both UG & PG) as per GU notification and HS 2nd Year preparatory examination HS 1st year classes to be continued
		4, 11, 18, 25	Sunday				
		2	Holiday (Asom Divas, Su-Ka-Pha Divas)				
		25	Holiday (Sunday & Christmas)				
		26 -31	Winter Vacation				

Academic Calendar: 2022-2023
Nalbari College, Nalbari

Sl. No	Month / Year	Dates	Working Day / Class Day / Examination Day / Holiday	No. of Holidays	No of Working Days	No of Class Days	Target Academic and other activities
1.	July 2022	1 - 31	Summer Vacation	31			Celebration of foundation day on 4th of July
		4	Foundation Day of College				
2.	August 2022	1 -6, 8 - 13, 16 - 18, 20, 22 - 27, 30 -31	Working Days / Class Days	7	24	24	Commencement of odd semester classes (Both PG/UG) from 1st August - 2021 Completion of admission process for all postgraduate programmes (PG first semester) PNC memorial debate competition and Prof. Kandarpa Kalita memorial quiz competition during 2nd and 4th week of August Commencement of PG first semester classes from 3rd week of August
		7, 14, 21, 28	Sunday				
		15	Independence Day				
		19	Holiday (Janmastomi)				
		29	Holiday (Tithi of Sri Sri Sankardev)				
3.	September 2022	1 - 3, 5 - 10, 12 - 13, 15 -17, 19 - 24, 16 - 28	Working Days / Class Days	5	25	22	Freshmen Social during 1st week of September Odd semester's 1st sessional examination during 2nd week of September NCSU election & counting during last week of September
		4, 11, 18, 25	Sunday				
		14	Holiday (Tithi of Sri Sri Madhabdev)				

11.	May 2023	2 - 4, 6, 8 - 13, 15 - 20, 22 - 27, 29 - 31	Working Days / Class Days	6	25	15	Commencement of even semester final examination as per GU notification
		7, 14, 21, 28	Sunday				
		1	May Day				
		5	Budddha Purnima				
12.	June 2023	1 - 3, 5 - 10, 12 - 17, 19 - 24, 26 - 28	Working Days / Class Days	6	24	24	Commencement of even semester final examination for PG Courses as per GU notification Commencement of UG odd semester classes from 2nd week of June Admission Process for BA/B.Sc. 1st sem. and HS 1st year for session 2023 -2024 to be completed within June.
		4, 11, 18, 25	Sunday				
		29 - 30	Holiday (Idd -Uz -Zuha)				

Summary

Odd Semester (July to December)	
Class days	95
Election/Freshman social	03
Holidays/Summer vacation	75
Final Examination	10
Total	183

Even Semester (January to June)	
Class days	111
College Week	07
Holidays / winter vacation	53
Final Examination	10
Total	181

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7.	January 2023	17 - 21, 23, 25, 27 - 28, 30	Working Days / Class Days	21	10	10	Commencement of even semester classes from 3rd week of January 2022
		1, 8, 15, 22, 29	Sunday				
		1-16	Winter Vacation / Magh Bihu				
		24	Holiday (Gwther Bathou San)				
		26	Holiday (Republic Day)				
		31	Holiday (Me -Dum - Me -Phi)				
8.	February 2023	1 --4, 6 - 11, 13 - 14, 16 - 17, 20 - 25, 27 - 28	Working Days / Class Days	6	22	15	College week during 1st week of February HS 2nd year final examination as per AHSEC notification Commencement of even semester 1st sessional examination during 4th week of February
		5, 12, 19, 26	Sunday				
		15	Holiday (Ali -Aye - Lingang)				
		18	Holiday (Sivaratri)				
9.	March 2023	1--4, 6, 8 - 11, 13 - 18, 20 - 25, 27 - 31	Working Days / Class Days	5	26	26	HS 1st year final examination as per AHSEC notification
		5, 12, 19, 26	Sunday				
		6	Karya Divas				
		7	Holiday (Dol Jatra)				
10.	April 2023	1, 3 - 6, 8, 11 - 13, 17 - 21, 24 - 29	Working Days / Class Days	9	21	21	TNG Memorial lecture during 1st week of April Commencement of HS 2nd year classes from last week of April Commencement of even semester 2nd Sessional examination during 3rd week of April
		2, 9, 16, 23, 30	Sunday				
		7	Good Friday				
		14 -16	Bohag Bihu				
		22 - 23	Holiday (Idd -Ul -Fitre)				

6.	December	1, 4-9, 11-16, 18-23	Working Days, Class Days	7	24		Odd semester final examination for PG courses as per GU notification and HS 2nd Year preparatory examination HS 1st year classes to be continued Winter break starts from last week of December
		3, 10, 17, 24, 31	Sunday				
		2	Holiday (Asom Divas / Su-Ka-Pha Divas)				
		25	Holiday (Christmas Day)				
		26-31	Tentative time for Winter Break				

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Contents of Course File

Dr. Dhiraj Talukdar
Associate Professor & HoD, Department of Chemistry

1. Vision & Mission of the Institute:

Vision:

- ✓ To provide outstanding education and training to our learners to achieve their goals.
- ✓ To reach out to the unreached.
- ✓ To forge institutional, departmental and individual linkage with society.
- ✓ To turn the college into a nodal facilitating centre for inclusive and sustainable development of the region.

Mission:

- ✓ To impart quality education to the learners.
- ✓ To create better academic environment in order to produce competent and industrious human resource.
- ✓ To provide student- centered academic and personal enrichment opportunities to enhance lifelong learning.
- ✓ To make education more relevant in the global perspective.
- ✓ To expand and accommodte with the changing traits of higher education.

2. Program Outcomes (POs):

After completing B.Sc the students are expected to:

- ➢ Acquire the knowledge with the facts related to various subjects in pure sciences.
- ➢ Acquire the skills in handling scientific instruments and performing in laboratory experiments
- ➢ The skills of observations and inferences from the scientific experiments.
- ➢ Analyze the given scientific data systematically and the ability to draw the conclusions.
- ➢ Be able to think creatively to propose novel ideas.
- ➢ Understand the basic concepts, fundamental principles, and the scientific theories related to various scientific phenomena and their relevancies in the day-to-day life.
- ➢ Understand the issues of environmental contexts and sustainable development.
- ➢ Develop scientific outlook not only with respect to science subjects but also in all aspects related to life.
- ➢ Develop various communication skills such as reading, listening, speaking, etc., which will help in expressing ideas and views clearly and effectively.
- ➢ Develop elegance by participating in various social and cultural activities, in order to spread knowledge, creating awareness about the social problems, blind faith, etc.

3. Program Specific Outcomes (PSO): Attached separately

4. Course Outcomes (COs): Described in the teaching plan

5. Class Time Table: Attached separately

6. Academic Calendar: Attached separately

7. Syllabus: As per G. U syllabus (Attached separately)

8. Teaching method for each unit of the syllabus: Attached in Teaching Plan

9. Assessment method for each unit: Described in Teaching Plan

10. Lecture notes (Hand written/typed)

11. Consolidated attendance statement of students: Xerox copy of the attendance register

12. Consolidated semester grades of students

13. Result analysis

14. Sample copies of evaluated answer scripts of Class test, assignments, tutorials, lab records, Mid, End semester exams (Highest, average and marginal pass)

DEPARTMENT OF CHEMISTRY
NALBARI COLLEGE, NALBARI

Programme Specific Outcome

After successful completion of B.Sc. (CBCS) degree with Honours in Chemistry, a student will be able to acquire the following:

- Basic knowledge of Chemistry which they can apply in their future course of action.
- The Skill Enhancement Courses (SEC) help them to enrich their subject knowledge with reference to their practical applicability.
- Discipline Specific Courses (DSE) also broaden their domain of understanding the subject.
- Become eligible and competent enough to qualify various National level competitive examinations (viz. JAM, CUET etc.) necessary for entry to higher studies.
- Develop various relevant logical and analytical skill which are useful to serve their capabilities for academia, entrepreneurship and industry.
- Disciplined and confident enough to get absorbed in various employable sectors.

Academic Calendar: 2022-2023
Nalbari College, Nalbari

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		6	Kavya Divas				
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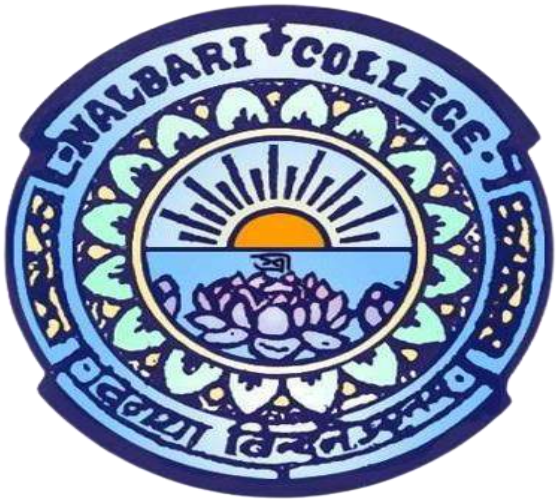
		25	Holiday (Christmas Day)				
		26-31	Tentative time for Winter Break				

COURSE FILE

[For Undergraduate Programme]

Academic Year 2022-2023



Department of Philosophy

Nalbari College, Nalbari, Assam

1. VISION AND MISSION OF THE DEPARTMENT

Vision

Nalbari College with eight decades of its glorious existence is guided by the motto Vidyayaa Vindate Amritam i.e. scholarship offers eternality. This profound vision encapsulates the institution's commitment to foster academic excellence and lifelong learning.

Mission

- To create better academic environment in order to produce competent and industrious human resource.
- To provide student centred academic and personal enrichment opportunities for encouraging lifelong learning.
- To accommodate and align with the changing traits of the higher education.
- To reach and empower the unreached.

2. PROGRAMME OFFERED BY THE DEPARTMENT

2.1. Programme Offered: 1. B. A. (Honours/Major)

2. B. A. (Regular/Minor)

2.2. Programme Outcomes (POs):

The Undergraduate Programme (B. A.) in Philosophy will enable a student to:

PO1	Through critical thinking, students will gain knowledge in the social sciences and humanities and be able to engage in and contribute to society.
PO2	Develop linguistic and analytical skills essential for advanced studies.
PO3	Develop students' capacity to engage with social and national issues, applying theoretical knowledge gained in the classroom.
PO4	Cultivate and understanding of contemporary societal challenges such as environmental crisis, human rights violation, gender inequalities etc.
PO5	Students learn how to conduct primary research and are so driven to pursue advanced research when they pursue further education.
PO6	Attain the capacity to choose diverse career paths, including roles in the judiciary, education, research, social work, journalism, etc., based on philosophical foundations.

3. CLASS TIME TABLE (Latest)

a. CLASS ROUTINE FOR BA ODD SEMESTERS, 2022

Days	8.30-9.30am	9.30-10.30am	10.30-11.30am	11.30am-12.30pm	12.30-1.30pm	1.30-2.30pm	2.30-3.30pm	3.30-4.30pm	4.30-5.30pm
Monday		D1S(H)	HS 2nd	D1S(H)		D3S(H)	D1S(G/R)		
		D3S(G/R)	D3S(H)	SEC (3rd)	D3S(H)	DSC-1			
		D5S(H)	D5S(H)		DSC-2	D5S(RE)	D5S(R/G)		
Tuesday		D1S(H)	D3S(H)	D1S(H)		HS 2nd		HS 1st	D1S(G/R)
			D5S(H)	SEC (3rd)	D3S(H)	D3S(H)	D3S(G/R)		
		D5S(H)	D5S(RE)		DSC-2	DSC-1	D5S(R/G)		
Wednesday	D1S(G/R)	D1S(H)		HS 1st		HS 2nd			
		D5S(H)	D3S(H)	D1S(H)	D3S(H)	D3S(H)		D3S(G/R)	SEC (3rd)
		D5S(RE)	DSC-1	SEC (5th)	DSC-2	D5S(H)	D5S(R/G)		
Thursday		D1S(H)		D1S(H)	HS 1st	D1S(G/R)	HS 2nd		
	D3S(G/R)		D3S(H)		D3S(H)	D3S(H)			SEC (3rd)
		D5S(H)	DSC-1	SEC (5th)	DSC-2	D5S(H)	D5S(R/G)	D5S(RE)	
Friday		HS 1st		D1S(H)	D1S(H)	D1S(G/R)			
		D3S(H)	D3S(H)	D3S(G/R)		D3S(H)			
		D5S(H)	DSC-1	D5S(H)	D5S(R/G)	DSC-2	D5S(RE)	SEC (5th)	
Saturday		HS 2nd	D3S(H)	D1S(H)	D1S(H)	HS 1st	D1S(G/R)		
		D3S(H)	D5S(RE)		D3S(G/R)	D3S(H)			
		D5S(H)	DSC-1	D5S(H)	D5S(R/G)	DSC-2		SEC (5th)	

Abbreviations: SEC-Skill Enhancement Course, D1S (H)- BA1st Sem (Honours), D3S (H)- BA3rd Sem (Honours), D5S (H)- BA5th Sem (Honours), D1S (G/R)- BA1st Sem (Generic Regular), D3S (G/R)- BA3rd Sem (Generic Regular), D5S (R/G)- BA5th Sem (Generic Regular), D5S (RE)- BA5th Sem (Regular Elective)

a. CLASS ROUTINE FOR BA EVEN SEMESTERS, 2023

Days	8.30-9.30am	9.30-10.30am	10.30-11.30am	11.30am-12.30pm	12.30-1.30pm	1.30-2.30pm	2.30-3.30pm	3.30-4.30pm	4.30-5.30pm
Monday		D2S(H)	HS 2nd	D2S(H)		D4S(H)	D2S(G/R)		
		D4S(G/R)	D4S(H)	SEC (4th)	D4S(H)	DSC-1			
		D6S(H)	D6S(H)		DSC-2	D6S(RE)	D6S(R/G)		
Tuesday		D2S(H)	D4S(H)	D2S(H)		HS 2nd		HS 1st	D2S(G/R)
			D6S(H)	SEC (4th)	D4S(H)	D4S(H)	D4S(G/R)		
		D6S(H)	D6S(RE)		DSC-2	DSC-1	D6S(R/G)		
Wednesday	D1S(G/R)	D2S(H)		HS 1st		HS 2nd			
		D6S(H)	D4S(H)	D2S(H)	D4S(H)	D4S(H)		D4S(G/R)	SEC (4th)
		D6S(RE)	DSC-1	SEC (6th)	DSC-2	D6S(H)	D6S(R/G)		
Thursday		D2S(H)		D2S(H)	HS 1st	D2S(G/R)	HS 2nd		
	D3S(G/R)		D4S(H)		D4S(H)	D4S(H)			SEC (4th)
		D6S(H)	DSC-1	SEC (6th)	DSC-2	D6S(H)	D6S(R/G)	D6S(RE)	
Friday		HS 1st		D2S(H)	D2S(H)	D2S(G/R)			
		D4S(H)	D4S(H)	D4S(G/R)		D4S(H)			
		D6S(H)	DSC-1	D6S(H)	D6S(R/G)	DSC-2	D6S(RE)	SEC (6th)	
Saturday		HS 2nd	D4S(H)	D2S(H)	D2S(H)	HS 1st	D2S(G/R)		
		D4S(H)	D6S(RE)		D4S(G/R)	D4S(H)			
		D6S(H)	DSC-1	D6S(H)	D6S(R/G)	DSC-2		SEC (6th)	

Abbreviations: SEC-Skill Enhancement Course, D1S (H)- BA1st Sem (Honours), D3S (H)- BA3rd Sem (Honours), D5S (H)- BA5th Sem (Honours), D1S (G/R)- BA1st Sem (Generic Regular), D3S (G/R)- BA3rd Sem (Generic Regular), D5S (R/G)- BA5th Sem (Generic Regular), D5S (RE)- BA5th Sem (Regular Elective)

4. ACADEMIC CALENDAR (2022-2023)

Departmental Academic Calendar, May 2021 -March 2022

Department of Philosophy

Nalbari College

Month	Date(s)	Action Plan	Remarks
May 2021	4th Week of May	Commencement of UG Classes of Even Semester in Online Mode	Due to COVID-19 Pandemic
June	June – July		
Aug	2nd Week of Aug 2021	Conduct of Final Examination of Even Semester in Online Mode	
Sep	6 Sep 2021	Commencement of UG Classes of Odd Semester	
Nov	18 Nov 2021	World Philosophy Day Celebration	
Dec	11 Dec to 17 Dec 2021	Sessional Examination	Conduct by College Authority
	21 Dec to 24 Dec 2021	Sessional Examination	Conduct by Department
Jan 2022	11/12 Jan	Election & Counting	College Election
Feb	26 Feb	Conduct of Final Examination of Odd Semester	
March	15 March	HS Final Examination	

Departmental Academic Calendar, April 2022 – June 2023

Department of Philosophy

Nalbari College

Month	Date(s)	Action Plan	Remarks
April	3rd Week of April, 2022	Commencement of UG Classes of Even Semester	
May	23 May – 28 May 2022	College Week	
June	8 June – 14 June 2022	Sessional Examination	Conduct by College Authority
	28 June – 30 June 2022	Sessional Examination	Conduct by Department
July	1 July 2022	Farewell	BA 6th Sem (2019 – 2022 Batch)
	7 July	Conduct of Final Examination of 6th Semester	
	15 July 2022	Meeting for 4th Sem SEC Project	

	20 July – 7 Aug 2022	Summer Vacation	
Aug	8 Aug 2022	Commencement of UG Classes of 1st Semester & HS 1st and 2nd Year	
	13 Aug 2022	Conduct of Final Examination of 4th and 2nd Semester	
Sep	16 Sep 2022	Commencement of UG Classes of 5th and 3rd Semester	
	22 Sep 2022	Farewell (Dr. Malaya Borah)	
Oct	19 Oct – 20 Oct	Sessional Examination of 1st and 3rd Sem	Conduct by Department
Nov	11 Nov and 12 Nov 2022	Election and counting	College Election
	15 Nov – 17 Nov 2022	Sessional Examination of 5th Sem	Conduct by Department
	22 Nov 2022	Conduct of Final Examination of Odd Semester	
Dec	1 Dec – 14 Dec 2022	Preparatory Examination of HS 2nd Year	
	24 Dec 2022 – 16 Jan 2023	Winter Vacation	
Jan 2023	17 Jan 23	Commencement of UG Classes of Even Semester	
Feb	8 Feb - 14 Feb 23	College Week	
	20 Feb 23	HS Final Examination	
March	16 March 23	Sessional Examination	Conduct by Department
April	12 April 23	Interview (for Sanctioned Post)	
	19 April – 26 April 23	Sessional Examination	Conduct by College Authority
	29 April 23	Farewell	BA 6th Sem (2020 – 23 Batch)
May	3 May 23	Academic Lecture on “Moral Status: Obligation to persons and other living things”	Delivered by Dr. Tapan Talukdar, Assistant Prof., KVBS University
	6 May- 9 June 23	Conduct of Final Examination of Even Semester	
June	1 June	Joined two Sanction Post in our department	1. Sony Das 2. Simi Borgohain

Course File

(for 1st Semester)

1. PROGRAMME SPECIFIC OUTCOMES (PSOs):

After successfully completing B. A. in Philosophy (Honours/Major/Minor/Regular/Skill) the following PSO are expected of the students:

PSO1	Develop a comprehensive understanding of the fundamental concept in philosophy, spanning areas such as Metaphysics, Epistemology, Axiology etc.
PSO2	Become acquainted with major figures and developments in the history of philosophy, gaining insight into the evolution of philosophical thought.
PSO3	Enhancing logical reasoning skills.
PSO6	Students acquire knowledge and skills to defend personal views and engage in challenging philosophical problems, fostering resilience and critical thinking.
PSO7	Acquiring knowledge to construct valid arguments, as well as developing the aptitude and ability to establish their own.
PSO10	Increase critical understanding and thinking in Indian Logic
PSO12	Explore analytic trends in Western philosophy, enhancing critical analysis and embracing linguistic approaches to philosophical problems.

2. COURSE LEARNING OUTCOMES (CLOs) AND COURSE OBJECTIVES (COs)

Semester	Course Title (Course Code)	Course Learning Outcomes (CLOs)	Course Objectives (Cos)
I (CBCS)	Indian Philosophy- I (PHI-HC-1016)	1. At the completion of the course, a student is expected to be able to articulate the distinct areas of thoughts of ancient India. 1. Students become aware of the metaphysics and epistemology of various schools which help them to understand the society at large.	1. The course introduces the students to thoughts which were available in ancient India. 2. The course introduces the ideas and concepts which helped Heterodox systems of Indian Philosophy to develop.

I (CBCS)	Logic- I (PHI-HC-1026)	1. On the completion of the course students will be able to distinguish valid and invalid deductive arguments. 2. The students will be able to identify the basic logical structure of arguments in ordinary language by translating them into proper logical form. 3. The students will be able to construct valid syllogism, and they will learn about syllogism in ordinary language.	1. The course is designed to introduce the students the basic concepts and terms used in reasoning and argumentation. 2. The course introduces the students the methods and principles for distinguishing correct from incorrect reasoning.
I (CBCS)	General Philosophy (PHI-HG/RC-1016)	1. The course will enable students to understand various philosophical concepts like substance, causality, space, and time, etc. 2. Students will become familiar with certain ways of putting arguments about the concepts. 3. Students will also learn the different approaches taken up by rationalism, empiricism and critical thinkers in understanding the concepts. 4. The course is expected to make the students able to analyze various theories of truth.	1. The course will introduce the students to the history of Modern Western Philosophy. 2. Philosophers like Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, as well as the German Idealists like Kant and Hegel will be studied. 3. The questions that concern these philosophers and their intensive argument will be read.

1. **i.**
   a. **Syllabus**
   Semester: **I**
   Course Name: **INDIAN PHILOSOPHY I**
   Course Code: **PHI-HC-1016**

Unit I

Development of Indian Philosophy: the Vedas, the Upanisads, Bhagavadgita Meaning and scope of Indian Philosophy

Schools of Indian Philosophy; the Common Characteristics of Indian Systems

Unit II

Carvaka Materialism: Epistemology (Denial of Inference and Testimony); Metaphysics Four elements; denial of soul; denial of God; Ethics

Jainism: Anekäntavāda; Syadvada; Saptabhangi Naya

Jainism: Navatattva

Unit III

Buddhism: Four Noble Truths; Suffering; Cause of Suffering and Chain of Twelve Links; Cessation of Suffering and Nirvana; Way of Cessation of Suffering and Astangika Marga

Buddhism: Theory of Dependent Origination

Buddhism: Theory of Impermanence; Theory of No-soul

Unit IV

Abhidharma Schools: Vaibhäşika (bähya-pratyaksa-vāda); Sautrānika (bahyānumeya-vāda)

Madhyamaka: Sunyavāda

Yogacāra: Vijñānavāda

b. Teaching Method for Each Unit of The Syllabus

Unit	Teaching Method
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method
IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	Assessment Method
I	Sessional Test
II	Sessional Test
III	Viva
IV	Assignment

d. Lecture notes (Handwritten/typed) : Handwritten
e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done
g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly

ii.

a. Syllabus

Semester: **I**
Course Name: **LOGIC - I**
Course Code: **PHI-HC-1026**

Unit I

Argument and Argument Form

Truth and Validity

Deduction and Induction

Unit II

Categorical Propositions; Translating Ordinary Proposition into Standard Form;

Square of Opposition.

Categorical Syllogism; Figures and Moods

Immediate Inference

Unit III

Venn Diagrammatic Representation of Propositions and Arguments

Idea of Existential Import

Testing Validity by Venn Diagram

Unit IV

Concept of Set

Operations of Set- Union, Intersection and Difference

Symbolization of Sentences by Set Notations

b. Teaching Method for Each Unit of The Syllabus

Unit	Teaching Method
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method
IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	Assessment Method
I	Assignment
II	Sessional Test
III	Sessional Test
IV	Assignment

d. Lecture notes (Handwritten/typed) : Handwritten
e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done
g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly

iii.

a. Syllabus

Semester: **I**
Course Name: **GENERAL PHILOSOPHY**
Course Code: **PHI-HG/RC-1016**

Unit I

Definition, Nature and Scope of Philosophy

Branches of Philosophy Realism and Idealism

Unit II

Substance

Causality

Space and Time

Unit III

Empiricism, Rationalism

Criticism

Scepticism

Unit IV

Correspondence

Coherence

Pragmatic and Semantic

b. Teaching Method for Each Unit of The Syllabus

Unit	Teaching Method
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method
IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	Assessment Method
I	Sessional Test
II	Sessional Test
III	Assignment
IV	Assignment

d. Lecture notes (Handwritten/typed) : Handwritten
e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done
g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly

Course File

(for 2nd Semester)

1. PROGRAMME SPECIFIC OUTCOMES (PSOs):

After successfully completing B. A. in Philosophy (Honours/Major/Minor/Regular/Skill) the following PSO are expected of the students:

PSO1	Develop a comprehensive understanding of the fundamental concept in philosophy, spanning areas such as Metaphysics, Epistemology, Axiology etc.
PSO2	Become acquainted with major figures and developments in the history of philosophy, gaining insight into the evolution of philosophical thought.
PSO3	Enhancing logical reasoning skills.
PSO6	Students acquire knowledge and skills to defend personal views and engage in challenging philosophical problems, fostering resilience and critical thinking.
PSO7	Acquiring knowledge to construct valid arguments, as well as developing the aptitude and ability to establish their own.
PSO10	Increase critical understanding and thinking in Indian Logic
PSO12	Explore analytic trends in Western philosophy, enhancing critical analysis and embracing linguistic approaches to philosophical problems.

2. COURSE LEARNING OUTCOMES (CLOs) AND COURSE OBJECTIVES (COs)

Semester	Course Title (Course Code)	Course Learning Outcomes (CLOs)	Course Objectives (Cos)
II (CBCS)	Greek Philosophy (PHI-HC-2016)	1. It will give the students a comprehensive understanding of early Greek Philosophy. 2. The student will learn about the questions concerning virtue, justice, theory of forms, and causality. 3. The student will learn about the different philosophical theories about the composition of the stuff that makes up the world.	1. to introduce the student to the main tenets of Greek philosophy. 2. The objective is to trace the origin of Greek philosophy, beginning from Pre-Socratic to Socrates, Plato and Aristotle.

II(CBCS)	Logic II (PHI-HC-2026)	1. On the completion of the course, students will be able to break down an argument and analyze the truth conditions of its component parts. 2. The students will be able to symbolize everyday language. 3. The students will be able to construct formal proof of validity.	1. The course introduces students to the basics of symbolic logic (modern deductive logic) 2. The course introduces tools for symbolizing everyday language and arguments using symbolic notation. 3. The course is designed to introduce the students the formal principles and techniques of modern symbolic logic for distinguishing valid arguments from the invalid arguments.
	Indian Philosophy (PHI-HG/RC-2016)	1. Understanding Indian philosophical thought through the basic knowledge of orthodox and heterodox trends of Indian Philosophy.	1. The objective of this course is to acquaint the students with basic issues and problems of philosophy as discussed in Indian tradition.

1. **i.**
   a. **Syllabus**
   Semester: **II**
   Course Name: **Greek Philosophy**
   Course Code: **PHI-HC-2016**

   Unit I: Thales, Anaximander, Anaximenes

   Pythagoras, Heraclitus, Democritus and Parmenides

   Unit II: Protagoras

   Socrates' method

   Socrates' virtue

   Unit III: Plato

   Knowledge and Opinion

   Theory of Forms

   Justice

Unit IV: Aristotle

Form and Matter

Causation

Actuality and Potentiality

b. Teaching Method for Each Unit of The Syllabus

Unit	Teaching Method
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method
IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	Assessment Method
I	Sessional Test
II	Sessional Test
III	Assignment
IV	Assignment

d. Lecture notes (Handwritten/typed) : Handwritten
e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done
g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly

ii.

a. Syllabus

Semester: **II**
Course Name: **Logic - II**
Course Code: **PHI-HC-2016**

Unit I

Symbolic Logic and its Characteristics, Uses of Symbols Relation between Traditional Logic and Symbolic Logic Modern Classification of Propositions

Unit II

Logical Connectives and Variables

Symbolization of Sentences Symbolization of Arguments

Unit III

Truth Tables for Logical Connectives

Direct Truth-Table for testing validity of arguments

Indirect Truth-Table for testing validity of arguments

Unit IV

Formal Proof of Validity

Rules of Inference

Rules of Replacement

b. Teaching Method for Each Unit of The Syllabus

Unit	Teaching Method
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method
IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	Assessment Method
I	Assignment
II	Sessional Test
III	Sessional Test
IV	Assignment

d. Lecture notes (Handwritten/typed) : Handwritten
e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done
g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly

iii.

a. Syllabus

Semester: II
Course Name: INDIAN PHILOSOPHY
Course Code: PHI-HG-2016

Unit I

Development of Indian Philosophy, Meaning and scope of Indian Philosophy Schools of Indian Philosophy

Common Characteristic of Indian Systems

Unit II

Buddhism: Four Noble Truths

Buddhism: Theory of Impermanence; No-soul theary

Jainism: Syädväda, Anekäntavāda

Unit III

Sämkhya: Purusha; Nature

Samkhya: Evolution

Subject: Pramānas

Unit IV

Sankara: Brahman

Šańkara: Avidya & Adhyāsa

Ramanuja: Brahman; Jiva and Prakriti

b. Teaching Method for Each Unit of The Syllabus

Unit	Teaching Method
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method
IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	Assessment Method
I	Sessional Test
II	Sessional Test
III	Assignment
IV	Assignment

d. Lecture notes (Handwritten/typed) : Handwritten

e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done
g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly.

COURSE FILE

(For 3rd Semester)

1. PROGRAMME SPECIFIC OUTCOMES (PSOs):

After successfully completing B. A. in Philosophy (Honours/Major/Minor/Regular/Skill) the following PSO are expected of the students:

PSO1	Develop a comprehensive understanding of the fundamental concept in philosophy, spanning areas such as Metaphysics, Epistemology, Axiology etc.
PSO2	Become acquainted with major figures and developments in the history of philosophy, gaining insight into the evolution of philosophical thought.
PSO5	Recognize diverse values and moral dimensions, increasing the ability to make responsible decisions and understand the ethical implications of one's choices.
PSO9	Recognize personal value systems and apply them to navigate and contribute to one's social environment.

2. COURSE LEARNING OUTCOMES (CLOs) AND COURSE OBJECTIVES (COs)

Semester	Course Title (Course Code)	Course Learning Outcomes (CLOs)	Course Objectives (Cos)
III (CBCS)	Western Philosophy (Descartes to Hegel) (PHI-HC-3016)	1. It enables the students to know about thinking of the western philosophers and their system buildings. 2. Students will be introduced to the traditional western philosophical tradition i.e. Empiricism, Rationalism etc.	1. To provide students with a comprehensive understanding of the various theories of western philosophy beginning with Descartes. 2. This paper attempts to introduce students with the problem of modern western philosophy and to develop systematic and critical understanding.
	Indian Philosophy II (PHI-HC-3026)	1. Students is expected to be able to name the Orthodox systems of Indian philosophy. 2. Students is expected to be able to state the basic concepts and theories that are specific to a system.	1. The course introduces the students to Orthodox systems of philosophy which developed in India. 2. The course introduces the students to the basic ideas and thoughts of each specific system.
	Ethics (PHI-HC-3036)	1. The course will develop analytic and critical thinking regarding ethical dilemmas. 2. The course will enhance the ability to apply ethical	1. The course attempts to introduce students to the fundamental questions of moral philosophy, with attention to both

		principles in decision making. 3. Students will be able to see how moral principles are involved in different concrete situations.	classic and contemporary readings. What determines the right action from wrong, and how to act morally? How do we decide what morality demands of us in some situation? etc. 2. The course also addresses some issues of current moral debate.
	Ethics (PHI-HG/RC-3016)	1. The course will develop analytic and critical thinking regarding ethical dilemmas. 2. The course will enhance the ability to apply ethical principles in decision making. 3. Students will be able to see how moral principles are involved in different concrete situations.	1. The course attempts to introduce students to the fundamental questions of moral philosophy, with attention to both classic and contemporary readings. What determines the right action from wrong, and how to act morally? How do we decide what morality demands of us in some situation? etc. 2. The course also addresses some issues of current moral debate.

3. i.

a. Syllabus

Semester: **III (CBCS)**
Course Name: **WESTERN PHILOSOPHY (Descartes to Hegel)**
Course Code: **PHI-HC-3016**

Unit I: Rationalism
Descartes: Cartesian Method, mind-body dualism
Spinoza: God and Substance
Leibnitz: Theory of monads, pre-established harmony

Unit II: Empiricism
Locke: critique of innate ideas, substance and qualities
Berkeley: esse est percipi
Hume: Impression and ideas, concept of self

Unit III: Kant

Possibility of synthetic a priori judgement
Space and time
Categories

Unit IV: Hegel
Dialectic Method
Absolute Idealisms
Master-slaves dialectic

b. Teaching Method for Each Unit of The Syllabus

Unit	Teaching Method
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method
IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	Assessment Method
I	Sessional Test
II	Sessional Test
III	Assignment
IV	Assignment

d. Lecture notes (Handwritten/typed) : Handwritten
e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done
g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly

ii.

a. Syllabus
Semester: **III (CBCS)**
Course Name: **INDIAN PHILOSOPHY II**
Course Code: **PHI-HC-3026**

Unit I

Sāṃkhya: Puruṣa; Prakṛti; Causation

Yoga: Cittavṛtti and its Nirodha; Aṣṭaṅgika Mārga

Unit II

Nyāya: Pramānas

Vaiśeṣika: Padārthas; Atomistic theory of Creation

Unit III

Mimāṃsa: Pramānas

Mimāṃsa: Pramānyavāda; Khyātivāda

Uniit IV

Śaṅkara: Brahman; Atman; Adhyāsa and Avidyā

Rāmanuja; Brahman; Jiva and Jagat; Apṛthaksiddhi

Sankardeva's concept of God and Bhakti

b. Teaching Method for Each Unit of The Syllabus

Unit	Teaching Method
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method
IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	Assessment Method
I	Sessional Test
II	Sessional Test
III	Assignment
IV	Assignment

d. Lecture notes (Handwritten/typed) : Handwritten
e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done
g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly

iii.

a. Syllabus

Semester: **III (CBCS)**
Course Name: **ETHICS**
Course Code: **PHI-HC-3036**

Unit I
Nature, Scope and Utility of study of Ethics
Object of Moral Judgement, Moral Obligation
Postulates of Morality

Unit II
Virtue Ethics: Aristotle
Deontological Ethics: Kant
Utilitarianism: Bentham, Mill

Unit III
Theories of Punishment
Professional Ethics
Environmental Ethics

Unit IV
Law of Karma, Varṇa and Aśrama Dharma, Puruṣārtha
Buddhist Pañcaśīla; Brahmavihāra
Jaina Triratna, Aṇuvrata and Mahāvrata

b. Teaching Method for Each Unit of The Syllabus

Unit	Teaching Method
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method
IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	Assessment Method
I	Sessional Test
II	Sessional Test
III	Viva-voce
IV	Assignment

d. Lecture notes (Handwritten/typed) : Handwritten
e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done
g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly

iv.

a. Syllabus

Semester: **III (CBCS)**
Course Name: **ETHICS**
Course Code: **PHI-HG/RC-3016**

Unit I
Nature, Scope and Utility of study of Ethics
Object of Moral Judgement, Moral Obligation
Postulates of Morality

Unit II
Virtue Ethics: Aristotle
Deontological Ethics: Kant
Utilitarianism: Bentham, Mill

Unit III
Theories of Punishment
Professional Ethics
Environmental Ethics

Unit IV
Law of Karma, Varṇa and Aśrama Dharma, Puruṣārtha
Buddhist Pañcaśīla; Brahmavihāra
Jaina Triratna, Aṇuvrata and Mahāvrata

b. Teaching Method for Each Unit of The Syllabus

Unit	Teaching Method
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method
IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	Assessment Method
I	Sessional Test
II	Sessional Test
III	Assignment
IV	Assignment

d. Lecture notes (Handwritten/typed) : Handwritten
e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done
g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly

Course File

(for 4th Semester)

1. PROGRAMME SPECIFIC OUTCOMES (PSOs):

After successfully completing B. A. in Philosophy (Honours/Major/Minor/Regular/Skill) the following PSO are expected of the students:

PSO3	Enhancing logical reasoning skills.
PSO4	Determine how philosophy relates to other fields, such as literature, the social sciences, and the natural sciences.
PSO6	Students acquire knowledge and skills to defend personal views and engage in challenging philosophical problems, fostering resilience and critical thinking.
PSO7	Acquiring knowledge to construct valid arguments, as well as developing the aptitude and ability to establish their own.
PSO8	To learn contemporary techniques and accepted answers to philosophical questions, staying informed about the latest advancements in the field.
PSO9	Recognize personal value systems and apply them to navigate and contribute to one's social environment.
PSO11	Acquaint with major world religions, fostering religious tolerance and interfaith understanding.

2. COURSE LEARNING OUTCOMES (CLOs) AND COURSE OBJECTIVES (COs)

Semester	Course Title (Course Code)	Course Learning Outcomes (CLOs)	Course Objectives (Cos)
IV(CBCS)	Contemporary Indian Philosophy (PHI-HC-4016)	1. The course is expected to make the students learn how to compare the contemporary approach to philosophy with the traditional one. 2. The course is expected to make the students explain as well as analyze the concepts as found in the philosopher. 3. The course is expected to make the students revise their philosophical outlook in the light of contemporary Indian philosophy.	1. The course is introduced to make the students familiar with the contemporary approach to philosophy. 2. The course is introduced to acquaint the students with the philosophical ideas of contemporary Indian philosophers like Aurobindo, Gandhi, Vivekananda, Radhakrishnan.
IV(CBCS)	Philosophy of Religion (PHI-HC-4026)	1. The course is expected to enable the students to provide philosophical justification of the important religious concepts like proofs for the existence of God, relation between God and the world, faith and reason, etc.	1. The course is introduced to acquaint the students with the meaning, nature and scope of philosophy of Religion. 2. The course is introduced to make the students familiar with basic religious concepts along

		2. The course is expected to enable the students to justify the issues of immortality of the soul, freedom of the will, miracle, incarnation, etc. 3. The course is expected to provide the students with proper understanding and clarification of the concepts.	with its philosophical significance. 3. To developed in the students a critical and philosophical outlook towards various faith and dogmas.
IV(CBCS)	Political & Social Philosophy (PHI-HC-4036)	1. The course is expected to make the students describe as well as analyse the social and political concepts. 2. Students will be able to express thoughts on some major philosophical questions in the area of social and political philosophy with respect to the intellectual and historical developments of the questions.	1. To explore different theories and concepts regarding society and politics. 2. It aims at studying different ranges of social and political thinkers, theories and concepts.
IV(CBCS)	Logic (PHI-HG/RC-4016)	1. On the completion of the course students will be able to distinguish valid and invalid deductive arguments. 2. The students will be able to identify the basic logical structure of arguments in ordinary language by translating them into proper logical form. The students will be able to construct valid syllogisms, and they will learn about syllogisms in ordinary language.	1. The course introduces students to the basics of symbolic logic (modern deductive logic) 2. The course introduces tools for symbolizing everyday language and arguments using symbolic notation. 3. The course is designed to introduce the students the formal principles and techniques of modern symbolic logic for distinguishing valid arguments from the invalid arguments.

1. **i.**

a. Syllabus

Semester**: IV**
Course Name: **CONTEMPORARY INDIAN PHILOSOPHY**
Course Code: **PHI-HC-4016**

Unit I: Aurobindo

Evolution

Super mind

Synthesis of yoga

Unit II: Radhakrishnan

Religious experience

Intellect and intuition

Man and his destiny

Unit III: Gandhi

Religion, Truth, Non-violence

Satyagraha, Sarvodaya, Swadeshi

Critique of industrialisation, trusteeship

Unit IV: Vivekananda

Universal religion

Practical Vedanta

Philosophy of education

b. Teaching Method for Each Unit of The Syllabus

Unit	**Teaching Method**
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method
IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	**Assessment Method**
I	Sessional Test
II	Sessional Test
III	Viva

IV	Assignment

d. Lecture notes (Handwritten/typed) : Handwritten
e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done
g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly

ii.

a. Syllabus

Semester: **IV**
Course Name: **PHILOSOPHY OF RELIGION**
Course Code: **PHI-HC-4026**

Unit I

Nature of Philosophy of religion and its distinction from theology

Religious experience

Religion and Science

Unit II

Ontological argument

Cosmological argument; Teleological argument

Moral argument

Unit III

Reason, Faith and Revelation Freedom of Will Immortality of the soul

Unit IV

Religious language and symbolism

Anti religious theories-Materialism and logical positivism

Religious Philosophy of Sankaradeva

b. Teaching Method for Each Unit of The Syllabus

Unit	**Teaching Method**
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method

IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	Assessment Method
I	Seminar
II	Sessional Test
III	Sessional Test
IV	Seminar

d. Lecture notes (Handwritten/typed) : Handwritten
e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done
g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly

iii.

a. Syllabus

Semester: **IV**
Course Name: **POLITICAL & SOCIAL PHILOSOPHY**
Course Code: **PHI-HC-4036**

Unit I

Rights and Duties

Hatice

Equality & Liberty

Unit II

Anarchism

Socialism

Marxism

Unit III

Monarchy

Theocracy

Democracy

Unit IV

Humanism

Secularixm

Multiculturalism

b. Teaching Method for Each Unit of The Syllabus

Unit	Teaching Method
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method
IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	Assessment Method
I	Sessional Test
II	Sessional Test
III	Assignment
IV	Assignment

d. Lecture notes (Handwritten/typed) : Handwritten
e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done
g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly

iv.

a. Syllabus

Semester: **IV**
Course Name: **Logic**
Course Code: **PHI-HG/RC-5026**

UNIT I: Fundamental Concepts of logic Propositions and Arguments

Truth and Validity

Deduction and Induction

UNIT II: Aristotelian Syllogistic Logic

Categorical Propositions, Translating Ordinary Proposition into Standard Form

Square of Opposition

Categorical Syllogism, Figures and Moods

Immediate Inference

UNIT III: Symbolic Logic: Introduction

Symbolic Logic and its Characteristics, Uses of Symbols Relation between Traditional Logic and Symbolic Logic

Modern Classification of Propositions

UNIT IV: Propositional Logic

Logical Connectives: and, or, not; Material Conditional, Bi-conditional

Symbolization of everyday language

Truth-Table method of testing validity of argument, Shorter Truth Table

b. Teaching Method for Each Unit of The Syllabus

Unit	Teaching Method
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method
IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	Assessment Method
I	Sessional Test
II	Sessional Test
III	Assignment
IV	Assignment

d. Lecture notes (Handwritten/typed) : Handwritten
e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done
g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly.

Course File

(for 5th Semester)

1. PROGRAMME SPECIFIC OUTCOMES (PSOs):

After successfully completing B. A. in Philosophy (Honours/Major/Minor/Regular/Skill) the following PSO are expected of the students:

PSO1	Become acquainted with major figures and developments in the history of philosophy, gaining insight into the evolution of philosophical thought.
PSO2	Students acquire knowledge and skills to defend personal views and engage in challenging philosophical problems, fostering resilience and critical thinking.
PSO3	To learn contemporary techniques and accepted answers to philosophical questions, staying informed about the latest advancements in the field.
PSO4	Acquaint with major concept of Upanishad and Gita and its understanding.
PSO5	Explore analytic trends in Western philosophy, enhancing critical analysis and embracing linguistic approaches to philosophical problems.
PSO6	Students engage with the growing field of feminism, developing an understanding of women's rights and promoting equality of sexes.

2. COURSE LEARNING OUTCOMES (CLOs) AND COURSE OBJECTIVES (COs)

Semester	Course Title (Course Code)	Course Learning Outcomes (CLOs)	Course Objectives (Cos)
V (CBCS)	Analytic Philosophy (PHI-HC-5016)	1. The students will be able to understand the features of analytic philosophy, and will be able to distinguish between classical philosophy and analytic philosophy. 2. The students will be understand the importance of language in dissecting philosophical issues. 3. The students will be able to inculcate critical and reflective thinking.	1. The course is designed to get the students acquainted with one of the most influential schools of Contemporary Western Philosophy. 2. The course introduces to the students' analytic philosophers like G. E. Moore, Bertrand Russell, Early Wittgenstein and Later Wittgenstein.
V (CBCS)	Phenomenology and Existentialism (PHI-HC-5026)	1. The learning objective of the course is to enable students to understand the meaning of life that is not superficial. 2. The learning objective is to make the students come face-to-face with real life-problems and also various ways to improve and work on their will to live life well.	1. The objective of the course is to introduce students to various thinkers like Kierkegaard, Heidegger, Husserl, Sartre. 2. The objective of the course is to make them families with the existential and

			phenomenological issues that all humans face in their everyday lives.
	Philosophy of Upanisads (PHI-HE-5016)	1. The students will be able to understand the Upanisadic interpretations about the general social conditions, Ultimate reality and individual.	1. This paper attempts to acquaint the students with Vedic and Upanisadic Philosophy.
	Philosophy of Gita (PHI-HE-5026)	1. The students will be able to understand the basic ideas and theories of the Gita. 2. The students will be able to apply ethical principles derived from the Gita to real-life scenarios.	1. The objective of the course is to introduced students to various concept and theories of the Gita like Law of Karma, Conception of Yoga, Dharma, and the nature of reality etc. 2. To explore the ethical implications of Gita's teachings on personal conduct, morality and the pursuit of a righteous life.
	Contemporary Indian Philosophy (PHI-RE-5016)	1. The course is expected to make the students learn how to compare the contemporary approach to philosophy with the traditional one. 2. The course is expected to make the students explain as well as analyze the concepts as found in the philosopher. 3. The course is expected to make the students revise their philosophical outlook in the light of contemporary Indian philosophy.	1. The course is introduced to make the students familiar with the contemporary approach to philosophy. 2. The course is introduced to acquaint the students with the philosophical ideas of contemporary Indian philosophers like Aurobindo, Gandhi, Vivekananda, Radhakrishnan.
	Indian Yogic Tradition (PHI-GE-5016)	1. The students will be able to gain a comprehensive knowledge of the diverse paths within the yogic tradition and respective philosophical underpinnings. 2. Students will be able to acquire practical skills for	1. To introduce basics of Yoga and understand Jnana, Karma and Bhakti yoga. 2. To explore mental levels of yoga and eight-fold path. 3. Learn about Yoga in Buddhism and Jainism.

		personal growth by applying concepts like the eightfold path to improved mental and spiritual well-being.	4. To introduce Indian thinkers like Vivekananda, Aurobindo's contribution to yoga.

3. **i.**

a. Syllabus

Semester: **V**
Course Name: **Analytic Philosophy**
Course Code: **PHI-HC-5016**

Unit I:
Moore: The Analytic Turn of Philosophy
Moore: Refutation of Idealism
Moore: Defence of Common Sense

Unit II:
Russell: Logical Atomism
Russell: General Propositions and Existence
Russell: Theory of Description

Unit III:
Wittgenstein: The World as a Totality of Facts
Wittgenstein: Picture Theory of Meaning
Vienna Circle: Verification Theory and Rejection of Metaphysics

Unit IV:
Wittgenstein: Meaning and Use
Wittgenstein: Language Game
Wittgenstein: Critique of Private Language

b. Teaching Method for Each Unit of The Syllabus

Unit	**Teaching Method**
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method
IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	Assessment Method
I	Sessional Test
II	Sessional Test
III	Viva
IV	Assignment

d. Lecture notes (Handwritten/typed) : Handwritten
e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done
g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly

ii.

a. Syllabus

Semester: **V**
Course Name: **Phenomenology and Existentialism**
Course Code: **PHI-HC-5016**

Unit I: Kierkegaard
The three stages of human existence
Subjectivity and Truth

Unit II: Sartre
Existence and Essence
Freedom and Choice

Unit III: Heidegger
Authentic existence
Being-in-the-world and Temporality

Unit IV: Husserl
Theory of essence
Intentionality and Bracketing

b. Teaching Method for Each Unit of The Syllabus

Unit	Teaching Method
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method
IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	Assessment Method
I	Seminar
II	Sessional Test
III	Sessional Test
IV	Seminar

d. Lecture notes (Handwritten/typed) : Handwritten
e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done
g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly

iii.

a. Syllabus

Semester: IV
Course Name: Philosophy of Upanishad
Course Code: PHI-HE-5016

Unit I
Relation to Vedas
General Social Conditions
Outlines of Upanisadic Philosophy

Unit II
Diversity of Theories in Creation
Acosmic Theory of Creation
Cosmic Theory of Creation

Unit III
Brahman, the Absolute
Brahman, the World-Ground
Brahman as Cosmic and Acosmic Ideal

Unit IV Individual Destiny:
Individual Soul
Karma and Saṃsāra
Liberation

b. Teaching Method for Each Unit of The Syllabus

Unit	Teaching Method
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method
IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	Assessment Method
I	Sessional Test
II	Sessional Test
III	Assignment
IV	Assignment

d. Lecture notes (Handwritten/typed) : Handwritten
e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done
g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly

iv.

a. Syllabus

Semester: **V**
Course Name: **Philosophy of Gita**
Course Code: **PHI-HE-5026**

Unit I:
Law of Karma
Concept of Karma, Akarma, Vikarma
Freedom and Choice

Unit II:
Kṣetra-Kṣetrajña, puruṣa-prakṛti
Uttama Puruṣa and Ultimate Reality
Relation of individual self and Ultimate Reality

Unit III:
Conception of Yoga
Karma Yoga, Jñāna Yoga, Bhakti Yoga
Reconciliation of the Yogas

Unit IV:
Svabhāva, Svakarma, Svadharma
Niṣkamakarmayoga; Lokasaṃgraha
Liberation

b. Teaching Method for Each Unit of The Syllabus

Unit	Teaching Method
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method
IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	Assessment Method
I	Sessional Test
II	Sessional Test
III	Viva
IV	Viva

d. Lecture notes (Handwritten/typed) : Handwritten
e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done
g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly

V.

a. Syllabus
Semester: **V**
Course Name: **Contemporary Indian Philosophy**
Course Code: **PHI-RE-5016**

Unit I: Aurobindo
Evolution
Super mind
Synthesis of yoga

Unit II: Radhakrishnan
Religious experience
Intellect and intuition
Man and his destiny

Unit III: Gandhi
Religion, Truth, Non-violence
Satyagraha, Sarvodaya, Swadeshi
Critique of industrialisation, trusteeship

Unit IV: Vivekananda
Universal religion
Practical Vedanta
Philosophy of education

b. Teaching Method for Each Unit of The Syllabus

Unit	Teaching Method
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method
IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	Assessment Method
I	Sessional Test
II	Sessional Test
III	Assignment
IV	Assignment

d. Lecture notes (Handwritten/typed) : Handwritten
e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done
g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly

vi.

a. Syllabus
Semester: **V**
Course Name: **Indian Yogic Tradition**
Course Code: **PHI-GE-5016**

Unit I
Meaning and Essence of Yoga
Jnana Yoga, Karma Yoga, Bhakti Yoga

Unit II
Levels of Mental Life (Cittabhumi)
Eightfold Means of Yoga (Yoganga)
Unit III
Buddhist Conception of Yoga
Jaina Conception of Yoga

Unit IV
Swami Vivekananda on Raja Yoga
Sri Aurobindo's Integral Yoga

b. Teaching Method for Each Unit of The Syllabus

Unit	**Teaching Method**
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method
IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	**Assessment Method**
I	Sessional Test
II	Sessional Test
III	Assignment
IV	Assignment

d. Lecture notes (Handwritten/typed) : Handwritten
e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done
g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly

Course File

(for 6th Semester)

1. PROGRAMME SPECIFIC OUTCOMES (PSOs):

After successfully completing B. A. in Philosophy (Honours/Major/Minor/Regular/Skill) the following PSO are expected of the students:

PSO1	Develop a comprehensive understanding of the fundamental concept in philosophy, spanning areas such as Metaphysics, Epistemology, Axiology etc.
PSO4	Determine how philosophy relates to other fields, such as literature, the social sciences, and the natural sciences.
PSO5	Recognize diverse values and moral dimensions, increasing the ability to make responsible decisions and understand the ethical implications of one's choices.
PSO8	To learn contemporary techniques and accepted answers to philosophical questions, staying informed about the latest advancements in the field.
PSO9	Recognize personal value systems and apply them to navigate and contribute to one's social environment.
PSO11	Acquaint with major world religions, fostering religious tolerance and interfaith understanding.
PSO12	Explore analytic trends in Western philosophy, enhancing critical analysis and embracing linguistic approaches to philosophical problems.
PSO14	Gain understanding in applied ethics, addressing issues such as the value of human life, environmental ethics, and professional ethics, while navigating modern ethical challenges in areas like medical ethics, euthanasia, abortion, doctor-patient relations, media ethics, privacy, and ethical issues in cyberspace.

2. COURSE LEARNING OUTCOMES (CLOs) AND COURSE OBJECTIVES (COs)

Semester	Course Title (Course Code)	Course Learning Outcomes (CLOs)	Course Objectives (Cos)
VI (CBCS)	Philosophy of Mind (PHI-HC-6016)	1. The students will be able to think critically about human mind. 2. The students will be able to acquired the knowledge of mind-body problems and theories.	1. The objective of the course is to acquaint the students with certain issues in connection with philosophy of mind.
VI (CBCS)	Meta Ethics (PHI-HC-6026)	1. The course is expected to enable the students to understand about the ethical properties, statements, attitudes, and judgements.	1. To introduce students to normative ethics, Meta ethics, ethical concepts and evaluation. 2. The objective of the course is to students to various thinkers like GE Moore, AJ Ayer, CL Stevenson, RM Hare.

VI (CBCS)	Philosophy of Language (PHI-HE-6026)	1. Students will be able to make the basis difference between philosophical study of Language and scientific study of Language. 2. Students will be able to appreciate the different approaches to meaning. 3. They will be able to appreciate the different acts that are performed by different utterances.	1. Introduce the students with the philosophical study of Language as distinct from linguistics, concepts of meanings related to various theories of truth. 2. Distinction between constative and performative utterances and the different acts that are performed while making different utterances.
VI (CBCS)	Applied Ethics (PHI-HE-6036)	1. Students will be able to acquaint themselves with basic concepts of applied ethics. 2. Students will be able to understand problematic moral situations in practical lives and to reflect on their solutions from an ethical perspective.	1. To introduce basic concept of applied ethics concerning value of life, environmental ethics and professional ethics. 2. To introduce the moral considerations in our practical world. 3. medical ethics, media ethics etc. 4. To introduce the modern ethical issues such as medical ethics, media ethics etc.
VI (CBCS)	Philosophy of Religion (PHI-RE/GE-6016)	1. The course is expected to enable the students to provide philosophical justification of the important religious concepts like proofs for the existence of God, relation between God and the world, faith and reason, etc. 2. The course is expected to enable the students to justify the issues of immortality of the soul, freedom of the will, miracle, incarnation, etc.	1. The course is introduced to acquaint the students with the meaning, nature and scope of philosophy of Religion. 2. The course is introduced to make the students familiar with basic religious concepts along with its philosophical significance. 3. To developed in the students a critical and philosophical outlook towards various faith and dogmas.

VI (CBCS)	Political & Social Philosophy (PHI-RE-6026)	1. The course is expected to make the students describe as well as analyse the social and political concepts. 2. Students will be able to express thoughts on some major philosophical questions in the area of social and political philosophy with respect to the intellectual and historical developments of the questions.	1. To explore different theories and concepts regarding society and politics. 2. It aims at studying different ranges of social and political thinkers, theories and concepts.

1. **i.**
   a. **Syllabus**

Semester: **VI**
Course Name: **Philosophy of Mind**
Course Code: **PHI-HC-6016**

Unit I
Psychology and Philosophy of mind
Cartesian dualism
Problems of Cartesian dualism

Unit II
Parallelism
Occasionalism
Epiphenomenalism

Unit III
Behaviourism
Identity theory
Functionalism

Unit IV
Problem of Personal identity
Physical Criterion
Memory Criterion

b. Teaching Method for Each Unit of The Syllabus

Unit	Teaching Method
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method
IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	Assessment Method
I	Sessional Test
II	Sessional Test
III	Assignment
IV	Assignment

d. Lecture notes (Handwritten/typed) : Handwritten
e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done
g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly.

ii.

a. Syllabus

Semester: **VI**
Course Name: **META ETHICS**
Course Code: **PHI-HC-6026**

Unit I
Normative Ethics
Ethical Concepts and Evaluation-Good and Right
Meta Ethics

Unit II
G. E. Moore: Indefinability of 'Good'
G. E. Moore: Naturalistic Fallacy
G. E. Moore: Autonomy of Morals

Unit III
A. J. Ayer: Ethical Terms as Pseudo Concepts
C.L. Stevenson: Characteristics of Moral Discourse
C.L. Stevenson: Persuasive Definition

Unit IV
R. M. Hare: Universal Prescriptivism
R. M. Hare: Nature of Moral Arguments
R. M. Hare: Weakness of the Will

b. Teaching Method for Each Unit of The Syllabus

Unit	Teaching Method
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method
IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	Assessment Method
I	Class Test
II	Sessional Test
III	Sessional Test
IV	Viva

d. Lecture notes (Handwritten/typed) : Handwritten
e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done
g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly

iii.

a. Syllabus
Semester: VI
Course Name: Philosophy of Language
Course Code: PHI-HE-6026

Unit I
Language and World
Frege's Sense and Reference
Russell's Definite Description

Unit II
Ideational Theory of Meaning
Referential Theory of Meaning
Use Theory of Meaning

Unit III

Correspondence Theory of Truth
Coherence Theory of Truth
Pragmatic Theory of Truth

Unit IV

Performative and Constative Utterances
Locutionary, Illocutionary and Perlocutionary Acts
Theory of Illocutionary Forces

b. Teaching Method for Each Unit of The Syllabus

Unit	Teaching Method
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method
IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	Assessment Method
I	Sessional Test
II	Sessional Test
III	Assignment
IV	Assignment

d. Lecture notes (Handwritten/typed) : Handwritten
e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done
g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly

iv.

a. Syllabus

Semester: **VI**
Course Name: **Applied Ethics**
Course Code: **PHI-HE-6036**

Unit I

Nature of Applied Ethics, its scope Applied Ethics and Human Values

Unit II

Use and exploitation of nature Animal killing and animal rights

Unit III

Computer crime

Ethics and Legal aspects of virtual worlds

Unit IV

Rights and obligations of health care professionals, Patients and family, Abortion,

Euthanasia: Active and Passive

b. Teaching Method for Each Unit of The Syllabus

Unit	Teaching Method
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method
IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	Assessment Method
I	Sessional Test
II	Sessional Test
III	Viva
IV	Viva

d. Lecture notes (Handwritten/typed) : Handwritten
e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done
g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly

V.

a. Syllabus

Semester: **VI**
Course Name: **POLITICAL & SOCIAL PHILOSOPHY**
Course Code: **PHI-RE-6026**

Unit I

Rights and Duties

Justice

Equality & Liberty

Unit II

Anarchism

Socialism

Marxism

Unit III

Monarchy

Theocracy

Democracy

Unit IV

Humanism

Secularism

Multiculturalism

b. Teaching Method for Each Unit of The Syllabus

Unit	Teaching Method
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method
IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	Assessment Method
I	Sessional Test
II	Sessional Test
III	Assignment
IV	Assignment

d. Lecture notes (Handwritten/typed) : Handwritten
e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done

g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly

vi.

a. Syllabus

Semester: **VI**
Course Name: **PHILOSOPHY OF RELIGION**
Course Code: **PHI-GE-6016**

Unit I Religious Concepts Faith and Revelation
Idea of the Holy
Soul and Immortality

Unit-II Arguments for Existence of God
Ontological
Cosmological Teleological; Moral

Unit III Theories of Belief in God
Polytheism
Deism
Monotheism

Unit IV Relation of God and World
Deism
Pantheism
Panentheism

b. Teaching Method for Each Unit of The Syllabus

Unit	Teaching Method
I	Lecture – Discussion Method
II	Lecture – Discussion Method
III	Lecture – Discussion Method
IV	Lecture – Discussion Method

c. Assessment Method for Each Unit

Unit	Assessment Method
I	Sessional Test
II	Sessional Test
III	Assignment
IV	Assignment

d. Lecture notes (Handwritten/typed) : Handwritten
e. Consolidated attendance statement of students : to be kept properly
f. Result analysis: to be done
g. Sample copies of evaluated answer scripts of class test, assignments, tutorials, lab records, mid, end semester exams (Highest, average, and marginal pass) : to be kept properly.