

DEPARTMENT OF ECONOMICS, MORAN COLLEGE

PROGRAMME SPECIFIC OUTCOMES: B.A. ECONOMICS

On completion of BA (Economics), Students are able to:

1. Understand basic concepts of economics.
2. To able to analyze economic behavior in practice.
3. Understand the economic way of thinking.
4. The ability to analyze historical and current events from an economic perspective.
5. To able to deal with the advanced theoretical issues and their practical applications.
6. To create students ability to suggest of the various economic problems.

COURSE OUTCOMES: B.A. ECONOMICS

Semester I

Paper- 101 (Major)

Title of the paper- Micro Economics I

1. Student is expected to understand some basic concepts of microeconomics- the behavior of an economic agent, namely, a consumer, a producer, a factor owner and the price fluctuations in a market.
2. To understand the nature and scope of economics, the theory of consumer behavior, analysis of production function and equilibrium of a producer, consumer, the price formation in different markets structures and the equilibrium of firm and industry.
3. To understand the laws of demand and supply, market equilibrium and the impact of changes in demand and supply.
4. Understand concepts of Revenues and cost of production.

Semester II

Paper- ECOM -201

Title of the paper- Macro Economics

On completion of the course, students are able to

1. Understand the macro economic analysis,
2. Understand the national income accounting, approaches to calculating GDP,
3. Understand the classical and Keynesian theories of output and employment,
4. Understand the theories of consumption function and Investment spending, MEC and MEI,
5. Understand the determination of interest rate, effectiveness of monetary and fiscal policies in IS and LM framework.
6. Understand the concept of closed and open economy, BOP, basic accounting rules- Adjustment of BOP.

Semester III

Paper- ECOM -301

Title of the paper- Micro Economics II

On completion of the course, students are able to

1. Understand pricing in products market, rules for profit maximization, concept of Break Even Point and its practical utilities.
2. Understand pricing with market power-Monopoly, Monopsony, Natural and Bilateral monopoly.
3. Understand the decision making process in different market situations.
4. Understand the theories of factor pricing.
5. Understand the general equilibrium analysis- Economic efficiency and the market failure

Semester III

Paper- ECOM -302

Title of the paper- Statistical Methods in Economics

On completion of the course, students are able to understand some basic statistical methods that can be applied in economics.

1. Students are able to understand the measures of Central Tendency and Dispersion
2. Understand Elementary probability theory.
3. Understand the applicability of Sampling and census methods
4. Correlation and Regression analysis.
5. Concepts of Index number.

Semester IV

Paper- ECOM -401

Title of the paper- Mathematics for Economics

On completion of the course, students are able to understand some basic mathematical methods that can be applied in economics.

1. Students are able to understand the Sets and Set operations, Venn Diagram, Limit and Continuity of functions
2. Understand elements of Matrix Algebra and Input output analysis.
3. Differential Calculus and its Economic applications.
4. Integral Calculus and its economic applications
5. Differential and difference Equations, Cobweb theorem.

Semester IV

Paper- ECOM -402

Title of the paper- Public Economics- Theoretical Issues

On completion of the course, students are able to understand some basic theoretical concepts of public finance and the practical issues.

1. Students got knowledge of role and significance of public finance, public goods and private goods, principle of maximum social advantage.
2. Able to understand about Taxation, distribution of tax burden, Ability to pay Principle etc.
3. Understand incidence and approaches of taxation.
4. Understand public enterprise and its role in less developed countries
5. Understand the concepts of public expenditure and public debt, burden of public debt.

Semester V

Paper- ECOM -501

Title of the paper- Development Economics with Indian Perspective-I

On completion of the course, students are able to

1. Understand the concept of economic development and economic growth
2. Understand different indicators of economic development
3. Understand Characteristics of Developing countries
4. Understand some practical issues such as poverty, inequality and unemployment, policy approaches to tackle these problems in India.
5. Understand some economic growth models

Semester V

Paper- ECOM -502

Title of the paper- Public Economics; policy Issues

On completion of the course, students are able to acquaint with the fiscal policies designed for developed and developing economies with special thrust to the federal system of India.

1. Structure, pattern and Policies of Taxation in Developing Economies
2. Trend and Pattern of Public expenditure in India, Public debt and its impact on Indian Economy
3. Understand the concept of budget, concepts of deficits and the budgetary policy in India
4. Understand fiscal federalism in India
5. Understand union budgets and Economic policy

Semester V**Paper- ECOM -503*****Title of the paper- History of Economic Thought***

On completion of the course, students are able to acquaint with historical developments in the economic thoughts propounded by different schools which includes-

1. Pre-classical and classical economic thought
2. Historical school, State and Scientific Socialism, Marx and Modern Economist
3. Subjectivism and Marginalism
4. Keynesian Economic Thought
5. Indian Economic Thought

Semester V**Paper- ECOM -504*****Title of the paper- Monetary theories and Financial Markets***

On completion of the course, students are able to understand some basic concepts relating to monetary analysis and financial marketing with a reference to Indian financial markets.

1. Theories of Demand for and Supply of Money.
2. Inflation and deflation, Stagflation and Phillips Curve
3. Concepts of Business Cycle and Theories
4. Create the awareness among the Students of Modern Banking System and Non -banking Financial Intermediaries in India.
5. Understand about the financial Markets in India.

Semester VI**Paper- ECOM -601*****Title of the paper- Development Economics with Indian Perspective-II***

On completion of the course, students are able to understand some basic concepts relating to the development issues of Indian Economy and development problems of North East India.

1. Understand basic concepts of Planning in India
2. Understand the role of Agriculture in Economic development in India.
3. Understand the role of Industries in the development process in Indian Economy.
4. Understand basic features and the consequences of Economic Globalization
5. Able to understand the economic problems of North East India.

Semester VI

Paper- ECOM -602

Title of the paper- Environmental Economics

On completion of the course, students are able to understand some basic concepts of Environmental Economics along with the solutions to the environmental problems which includes-

1. Basic concepts of Ecology, Environment and Economy and their inter relationship.
2. Concepts of Market Failure and Externalities.
3. Solutions to the Environmental Problems.
4. Sustainable Development and the Indicators
5. Global and Local Environmental concerns.

Semester VI

Paper- ECOM -603

Title of the paper- International Economics

On completion of the course, students are able to understand some basic concepts of real and monetary sides of International Economics.

1. Understand Nature, Scope and Importance of International Economics.
2. Understand International Trade Theories
3. Terms of Trade and Gains from Trade and their measurements.
4. International Trade policies.
5. Understand Foreign exchange Markets and Exchange Rates
6. Evolution of International Monetary System.

Semester VI

Paper- ECOM -604

Title of the paper- Economic Issues of Assam

On completion of the course, students are able to understand

1. Economic Characteristics and Resources of Assam.
2. Agricultural – trends and Patterns in Assam
3. Problems and Prospects of Industrial Development of Assam.
4. Economic Infrastructures of Assam
5. Economic Problems of Assam, border area development.

PROGRAMME SPECIFIC OUTCOME OF MATHEMATICS (MAJOR):

After graduation the students will be able to learn-

PSO 1: To infuse the classical ideas of algebraic and analytic structures. The students can have a deeper insight of the developments of the generalized notions of Trigonometry. The students will have an orientation towards the vectorial notations of multivariable calculi.

PSO 2: Students will be able to use matrix methods for solving linear equations, have ideas on the basics of differential equations and also about the numerical methods of obtaining results where complexity of obtaining analytical solutions is sufficiently high.

PSO 3: Students will be able to identify the analytical aspects of Mathematical concepts.

PSO 4: The students will have a deeper understanding of Co-ordinate geometry and a broader insight towards the analytical aspects of Mathematics.

PSO 5: Students will be able to formulate simple programmes for numerical evaluation of computational problems. By Computer Laboratory, they will be exposed to a hand on experience on various Mathematical Software.

PSO 6: Students will be able to determine the Mathematical know how of linear programming problems of Operations Research and also to solve them using LPP techniques. Students will be exposed to the further analytical aspects of Mathematical concepts.

PSO 7: Students will be able to identify the basics of Mathematical Logic and that of the counting principles. Students will be allowed to have insights to more generalized analytical aspects.

PSO 8: Students will be able to use algebraic structures for explaining geometric concepts. Students will be exposed to the fundamentals of Numbers and their properties.

PSO 9: Students will be introduced to the fundamental concepts of Fluid Mechanics and its various applications in Physical Sciences.

PSO 10: Students will be introduced to the Mathematical background of Mechanics and the corresponding problem solving techniques.

PSO 11: Students will be exposed to the Topological Structures and the generalization concepts arising out of Real Analysis.

PSO 12: The students will be able to identify the relations between Mathematics and Theoretical Computer Science. Students will be introduced to the fundamentals of Graph Theory and different representations of a Graph for practical applications.

PSO 13: Students will be able to identify the characteristics of Abstract Algebraic Structures and also can have ideas on the basics of partial differential equations.

PSO 14: Students will be introduced to the application of Mathematical principles to the problems of Space Dynamics and Relativity.

COURSE OUTCOME OF MATHEMATICS(MAJOR):

Course Code MM-101:

CO 1: It introduced the basic knowledge of real sequences .

CO2: About the infinite series and its convergence.

CO3: Introduction of polynomial equations.

CO4: De Moivre's theorem and important deductions from De Moivre's theorem.

CO5: Trigonometrical and exponential functions of complex arguments.

CO6: Gregory's series and evaluation of π .

CO7: Summation of trigonometric series and hyperbolic functions.

CO8: Ordinary and partial derivative of vectors and its related trends.

Course Code; MM-201:

CO1:Elementary operations on a matrix and rank of a matrix.

CO2: Solution of homogeneous & non homogeneous linear equations, Characteristic polynomial, characteristic equation, Eigen values and Eigen vectors, Cayley-Hamilton theorem.

CO3: Solution of homogeneous & non homogeneous linear equations, Characteristic polynomial, characteristic equation, Eigen values and Eigen vectors, Cayley-Hamilton theorem.

CO4: Linear differential equation of higher order with constant coefficients, linear homogeneous equations.

CO5: Linear equation of second order with variable coefficients: Removal of first order derivative, Change of independent variables, Method of variation of parameters.

CO6: Solution of algebraic and transcendental equation: Bisection method, Regula-falsi method, Iteration method, Newton-Raphson method and its geometrical interpretation. Solution of system of equations: Gauss elimination method, Gauss Seidal Method, Gauss Jordan method.

CO7:Diagonal and horizontal difference tables, finite difference operators, Newton's forward, backward and general interpolation formulae, Lagrange's interpolation formula, Quadrature: Trapezoidal rule, Simpson's quadrature (1/3 and 3/8 rule).

COURSE CODE MM-301:

CO1: Successive differentiation, Leibnitz's theorem, Indeterminate forms, Sub tangent, sub normal, derivative of arc length (Cartesian and polar forms), values of $\sin \phi, \cos \phi$, angle between radius vector and tangent ,polar sub tangent and polar subnormal, curvature and radius of curvature.

CO2: Function of one variable: Functions continuous on closed intervals, Differentiability, Darboux's theorem, Rolle's theorem, Lagrange mean value theorem, Cauchy's mean value theorem, Taylor's theorem, Taylor's series, Maclaurin's series.

CO3: Partial derivatives, Euler's theorem on homogeneous function

CO4: Function of several variable : Explicit and implicit functions, continuity, partial derivatives, definition of Jacobian, partial derivatives of higher order, Young's and Schwarz's

theorems(without proof), change of variables, Taylor's theorem, extreme values.

CO5: definite integrals by using properties only, Reduction formula of the integrands.

CO6: Rectification of plane curves, surface and volume of solids of revolution.

CO7: Definitions and existence of R-integrals(Reimann Integrals).

CO8: Primitive, fundamental theorem (1st & 2nd) of integral calculus, first mean value theorem and generalized first mean value theorem, related examples.

CO9: Improper integrals: Introduction and their convergence, Statements of Comparison test, Cauchy's test, Abel's test, Dirichlet's test and their applications.

CO10: Beta and Gamma functions and their relationship.

Course Code MM-302:

CO1: Transformation of coordinates: Translation of axes, Rotation of axes, Invariants, Removal of xy-term.

CO2: About the Pair of straight lines:

CO3: General Equation of second degree: Equation to the conic sections .

CO4: Equation of planes, straight lines.

CO5: Shortest distance between two lines, Skew lines.

CO6: Binary Composition, Definition and Examples of Group and its Elementary properties.

CO7:Normal subgroups, Quotient groups, Homomorphisms – Isomorphisms, permutations groups and its related theorems.

Course Code MM-401:

CO1: : Introduction to C-Programming: Basic programming concept, programming approach to solving problem.

CO2: Operators and expressions in C-programming.

CO3: Input output operations: Reading and writing a character, formatted input and formatted output.

CO4: Decision Making and Branching, IF statement, IF ... ELSE statement, nested IF, ELSE IF Ladder, WHILE statement, DO statement, FOR statement, Jumps in Loops.

CO5: About the Arrays in C-programming.

CO6: User defined functions: Elements of user defined functions, Definition of functions, return values and their types.

CO7: Computer Laboratory Practical- C-programming.

CO8:Matlab practical.

Course Code MM-402:

CO1: LP Model formulation & Graphical Method.

CO2: Theory of simplex algorithm and simplex method.

CO3: Duality Theory: Concept of duality, Types of primal dual problem.

CO4: Transportation Problem: Definition, Transportation Table, Loops in transportation tables and their properties.

CO5: Fourier series: Preliminary & other theorems, main theorem, series for even function, odd functions, half range series, Interval other than $[-\pi, \pi]$

CO6: Integration over \mathbf{R}^2 : Line integrals , double integrals.

CO7: Integration over \mathbf{R}^3 : Surface and surface integral, Stoke's and Gauss's theorems and their applications.

Course Code MM-501:

CO1: The Statement Calculus: Introduction, Sentential Connectives, Truth tables, Truth value, Validity, truth function, tautology and related theorems, arithmetic representation of sentential connectives.

CO2: Theory of Inference: Consequence, rule of inference and applications. Predicate calculus: symbolizing language.

CO3: Fundamental Principles of Counting: Binomial Theorem, Pascal and Vander Monde's identity, Multinomial theorem, Ramsey number, Catalan numbers, Stirling and Bell number

CO4: About the principles of Inclusion-Exclusion.

CO5: Analytic Function: Limit, Continuity and differentiability, Analytic functions, Cauchy-Riemann equations. Necessary and sufficient condition for a function to be analytic, polar form of C.R. equation, Harmonic functions, Construction of analytic function.

CO6: Complex Integrals : Definite integral, Jordan arc, contour, line integrals, Cauchy's theorem, simply and multiply connected domains, Cauchy's integral formula, Derivatives of analytic function, Morera's theorem, Liouville's theorem.

CO7: Power series: Taylor's series, Laurent's series and their related problems.

CO8: Poles & Residues: Definition and statement of the related theorems of isolated singularity, removable singularity and poles, calculation of residues, Cauchy's residue theorem, Contour

Integration (Integration round the unit circle, Integration of the type $\int_{-\infty}^{\infty} f(x)dx$ where no poles on the real axis)

Course Code MM-502:

CO1: System of linear equations, Definitions and examples of Vector space, vector subspace, basis and dimension of a Vector Space.

CO2: Definition of a line, Affine Space, Quotient Space, Linear transformation, Representation of Linear maps by Matrices, Kernel and image of a linear transformation, linear isomorphism, Geometric Ideas and some loose ends.

CO3: Peano's axiom, Well ordering property of positive integer, Division Algorithm, Theorems, G.C.D., Theorems, Euclidean Algorithm.

CO4: Prime numbers, unique factorization theorem (fundamental theorem of arithmetic), Euclid's theorem, greatest integer function $[n]$.

CO5: Definition, Basic properties of congruence, complete residue system, reduced residue system. Fermat's little theorem, Euler's theorem, Wilson's theorem, Solution of Congruence, Solutions of the problems of type $ax+by+c=0$, Chinese Remainder theorem, Solutions of simultaneous equations by using Chinese Remainder theorem.

CO6: Arithmetic Function, Euler's function, Division function, Mobius function $\mu(n)$, the Mobius inversion formula, Properties of arithmetic functions.

Course Code MM-503:

CO1: Kinematics: Real and ideal fluid, velocity of a fluid at a point, Eulerian and Lagrangian method, stream lines and path lines, steady and unsteady flows, velocity potential, rotational and irrotational motions, local and particle rate of change, equation of continuity, examples, acceleration of a fluid at a point, General analysis of fluid motion.

CO2: Equation of Motion: Euler's equation of motion, Bernoulli's equation, steady motion under conservative forces, impulsive motion, circulation, Kelvin's circulation theorem.

CO3: General theory of irrotational motion : Potential flow, deductions from Green's theorem, kinetic energy of a liquid, uniqueness theorems, Kelvin's minimum energy theorem, Mean value of velocity potential.

CO4: Fluid Pressure: Introduction, Fluid Pressure and related theorems, Density and specific gravity, Theorems on fluid pressure under gravity, Rate of variation of pressure, Differential

equation of pressure, Condition of equilibrium, Equi-pressure surfaces and lines of force, Curves of equi-pressure and equi-density, Examples.

CO5: Resultant Pressure and Centre of Pressure: Resultant fluid pressure and related theorems, Centre of pressure, Determination of centre of pressure of parallelogram, triangle, circle under different conditions, Examples, Thrust on curved surfaces, Examples.

CO6: Equilibrium and Stability of Floating Bodies: Condition of equilibrium of floating bodies, Examples, Unstable and Neutral equilibrium, Determination of Meta centre, Examples.

Course Code MM-504:

CO1: Reduction of a system of forces on a rigid body, Change of base point, Conditions of equilibrium, Point's central axis, wrench, pitch, screw, Invariants, Equations of central axis.

CO2: Virtual work, Common catenary, Stability of equilibrium.

CO3: Motion in a straight line and plane, Radial and transverse velocities and acceleration, angular velocity and angular acceleration, tangential and normal acceleration, Simple Harmonic Motion.

CO4: Central forces, Motion under resistance.

CO5: Dynamics of Rigid Body: Moments of inertia, Theorems of parallel and perpendicular axes, Moment of inertia about a line, Moment and product of inertia of a plane lamina, Momental ellipsoid and momental ellipse. D'Alembert's principle and general equations of motion, Motion of the centre of inertia and relative to the centre of inertia.

CO6: Laplace Transforms: Laplace Transforms of some elementary functions, Linearity property, First and second translational or shifting theorem. Change of scale property, Laplace transforms of derivatives Multiplication by powers of t , and related problems.

CO7: The inverse Laplace transforms: Definition, some inverse Laplace transforms properties of inverse Laplace transform, inverse Laplace transforms of derivatives, Multiplication by s , Convolution property, partial fraction method, Complex inversion formula.

CO8: Application to differential equations: Solution of ordinary differential equations with constant coefficients, Solution of ordinary differential equations with variable coefficients, solution of Simultaneous ordinary differential equations, Solution of partial differential equations.

Course Code MM-601:

CO1: Definition and examples of metric spaces, Open spheres and closed spheres, Neighborhoods, Open sets, Equivalent metrics, Interior points, Closed sets, Limit points and isolated points, Closure of a set, Boundary points, Distance between sets and diameter of a set, Subspace of metric space, Product metric spaces (definition only), Bases.

CO2: Convergent sequences, Cauchy sequences, complete & separable spaces, dense sets.

CO3: Continuous functions: Definition and characterizations, Extension theorem, Uniform continuity (definition only), Homeomorphism.

CO4: Compact spaces and compact sets, Sequential compactness.

CO5: Probability: Basic terminology, Mathematical probability, Statistical probability, Axiomatic approach to probability. Some theorems on probability, Conditional probability, Multiplication theorem of probability, Independent events, Multiplication theorem of probability for independent events, Extension of multiplication theorem of probability, Baye's theorem.

CO6: Measures of Dispersion: Standard deviation, Quartile deviation, co-efficient of variation.

CO7: Correlation and regression: Karl Pearson's co-efficient of correlation, Spearman Rank correlation co-efficient, regression lines and equation.

CO8: Theoretical Probability Distribution: Binomial, Poisson and Normal Distribution and their applications to simple problems.

CO9: Time series analysis: Different components of time series, analysis of trends (Least Square Method and Moving Average Method)

Course Code MM-602:

CO1: Recurrence Relations: Formulation as Recurrence Relations, Solutions of Recurrence Relations, Solutions of homogeneous and non homogeneous linear Recurrence Relations, Generating Functions.

CO2: Lattice: Definition and examples, Hasse diagram, Properties of Lattice, Lattice as an Algebraic systems, Sub lattice and lattice isomorphism, Special Classes : of lattice, Distributive lattice and Boolean algebras.

CO3: Boolean Algebra: Boolean algebra as lattice and an algebraic system, Properties of Boolean algebra, Sub-algebra and homomorphism of Boolean algebra, Boolean expressions, sum-of-products canonical form, values of Boolean expression & Boolean functions, representation by Karnaugh Maps, minimization of Boolean functions using Karnaugh Maps.

CO4: Logic Gates, Switching circuits & Logic circuits: Introduction, Gates and Boolean algebra, Applications, Special Sequences, Switching circuits, simplification of circuits, bridge circuits, logic circuits, multiple output logic circuit, minimization.

CO5: Graph Theory: Definition, Directed and undirected graphs, basic terminologies, finite and infinite graph, incidence and degree of vertex, isolated and pendent vertices, null graph, Handshaking theorem, types of graphs, sub graphs, graphs isomorphism, operations of graphs, connected graph, disconnected graphs and components.

CO6: Walk, path and circuits, Eulerian graphs, Hamiltonian graphs, Dirac's theorem, Ore's, theorem, Konigsberg's Bridge problem, Representation of graphs, matrix representation of graph, adjacency matrix, Incidence matrix, Linked representation of graphs.

Course Code MM-603:

CO1: Automorphism of groups, Inner automorphism, external and internal direct products.

CO2: Definition and examples of Ring, Special kinds of rings, sub rings and ideals, sum and product of ideals.

CO3: Quotient Ring, Homomorphism of ring, Imbedding of rings, Maximal and Prime ideal,

CO4: Introduction, Origins of First order PDE, Cauchy Problem for First order equations, Linear equations of first order, Lagrange equation, Integral Surface passing through a given curve, surface orthogonal to a given system of surfaces.

CO5: Nonlinear PDE of first order, Cauchy Method of characteristics, Compatible systems of first order equation, Charpit's Method, special types of first order equations, solution satisfying given conditions, Jacobi's Method.

Course Code MM-604:

CO1: Spherical Trigonometry: Spherical triangles and its properties, the sine-cosine formulae, four parts formula.

CO2: Coordinate systems: Position on the earth surface, horizontal system, equatorial system, ecliptic system, elements of the orbit in space, rectangular coordinate system, orbital plane coordinate system, transformation of systems.

CO3: Gravitation, the one and two body problems, elliptic motion, attraction of irregular bodies, rotational distortion, coordinates the orbits in space.

CO4: Special Theory: The fundamental postulates, Lorentz transformation, equations, composition of velocities in terms of rapidity. Lorentz transformation as rotation, consequences of Lorentz transformation equation viz. Lorentz-Fitzgerald contraction, Time dilation, the clock paradox, space like and time like integrals.

CO5: Relativistic mechanics : The relativistic conception of mass increasing with velocity, transformation laws of mass, velocity, acceleration, density, momentum, energy and force.

Course Code: ASM 201 (MIL – II)

MIL: “অসমীয়া ভাষাৰ প্ৰায়োগিক জ্ঞান”

কাকতখন প্ৰস্তুত কৰাৰ উদ্দেশ্যঃ

- অসমীয়া ভাষাৰ শুদ্ধ উচ্চাৰণ সম্পৰ্কে ছাত্ৰ-ছাত্ৰীক জ্ঞান প্ৰদান।
- আখৰ জোঁটনিৰ শুদ্ধতাৰ জ্ঞান প্ৰদান।
- পৰিভাষাৰ জ্ঞান।
- অনুবাদৰ সংজ্ঞা, স্বৰূপ সম্পৰ্কীয় ধাৰণা।
- বিভিন্ন ধৰণৰ পত্ৰলিখন সম্পৰ্কীয় প্ৰায়োগিক জ্ঞান দান ইত্যাদি।

MAJOR-201/Major-II/Course Code: ASMM-201

Paper Title: “অসমীয়া সাহিত্যৰ বুৰঞ্জী” (অৰুনোদই যুগৰ যুদ্ধোত্তৰ যুগলৈকে)

কাকতখন প্ৰস্তুত কৰাৰ উদ্দেশ্যঃ

- আধুনিক অসমীয়া সাহিত্যৰ পৰিচয় প্ৰদান।
- আধুনিক অসমীয়া ভাষা-সাহিত্যৰ প্ৰতিষ্ঠাত হেমচন্দ্ৰ-গুণাভিৰাম আদিৰ দৰে বৰেণ্য ব্যক্তিসকলৰ অৱদান সম্পৰ্কে জ্ঞান।
- অসমীয়া সাহিত্যৰ যুগ বিভাজন আৰু জোনাকী, আৱাহন, যুদ্ধোত্তৰ যুগৰ সাহিত্যৰ পটভূমি, বৈশিষ্ট্য আৰু সাহিত্যৰ চমু আভাস প্ৰদান।

MAJOR-604/Major-XIV/Course Code: ASMM-604

Title: “বিশ্বসাহিত্যৰ পৰিচয়”

কাকতখনৰ উদ্দেশ্যঃ

- বিশ্বসাহিত্যৰ ধাৰণা আৰু পৰিচয় প্ৰদানৰ উদ্দেশ্যে কাকতখন প্ৰস্তুত কৰা হৈছে।
- নিৰ্বাচিত ভাৰতীয় আৰু বিদেশী সাহিত্যৰ বিভিন্ন প্ৰকাৰৰ গল্প, নাটক, কবিতা, উপন্যাস আদি পাঠ্যক্রমত অন্তৰ্ভুক্ত কৰা হৈছে, যাৰ ফলত ছাত্ৰ-ছাত্ৰীসকলে বিশ্বসাহিত্যৰ লগত চিনাকি হ'ব পাৰিব।

BA 4th Semester

Course Code: ASMM-402

Course Outcomes:

- অসমৰ ভাষিক মানচিত্ৰ সম্পৰ্কে ছাত্ৰ-ছাত্ৰী জ্ঞাত হ'ব।
- ভাষাবোৰৰ ভাষাতাত্ত্বিক বৈশিষ্ট্য স্পষ্ট হ'ব।
- লিপি সম্পৰ্কে ধাৰণা স্পষ্ট হ'ব।
- অসমৰ ভাষাসমূহৰ লিপিৰ ইতিহাস অধ্যয়ন কৰিব।
- অসমৰ ভাষাসমূহৰ লিপি সমস্যা তথা লিপি গ্ৰহণৰ ক্ষেত্ৰত থকা অসুবিধাসমূহ আলোচিত হ'ব।

BA 6th Semester

Course Code: ASMM-602

- ভাৰতীয় আৰ্যভাষাৰ ক্ৰমবিকাশৰ বিষয়ে অধ্যয়ন কৰিবলৈ যাওঁতে পৃথিৱীৰ ভাষা পৰিয়ালবোৰৰ বিষয়ে এটি ধাৰণা কৰিব পাৰিব।
- ভাৰতীয় আৰ্যভাষাৰ ক্ৰমবিকাশৰ প্ৰতিটো স্তৰত থকা বিশেষত্ববোৰৰ আভাস পাব।
- অসমীয়া ভাষাৰ উৎপত্তি আৰু ক্ৰমবিকাশ সম্পৰ্কে ছাত্ৰ-ছাত্ৰী জ্ঞাত হ'ব।

(২)

6th Semester (603)

“অসমীয়া ভাষাৰ ভাষাতাত্ত্বিক অধ্যয়ন”

Course Outcomes:

- অসমীয়া ভাষাৰ ধ্বনিতত্ত্ব, ৰূপতত্ত্ব, বাক্যতত্ত্ব আৰু শব্দগঠন, শব্দসাধন সম্পৰ্কে পৰিচয় পাব পৰাকৈ কাকতখন প্ৰস্তুত কৰা হৈছে।
- অসমীয়া ভাষাৰ ভাষাতাত্ত্বিক দিশসমূহৰ অধ্যয়নৰ সুবিধার্থে ধ্বনিবিজ্ঞান আৰু ৰূপবিজ্ঞানৰ তাত্ত্বিক ক্ষেত্ৰখনৰ লগতো ছাত্ৰ-ছাত্ৰীক পৰিচয় কৰাই দিয়া হৈছে।

ASSAMESE

MIL-401

“অসমীয়া সাহিত্যৰ চানেকি”

১. শঙ্কৰদেৱৰ দিনৰ পৰা সাম্প্ৰতিক কাললৈকে বিস্তাৰিত অসমীয়া সাহিত্যৰ কবিতা আৰু কথা সাহিত্যৰ আভাস দিবৰ বাবে নিৰ্বাচিত পাঠৰ সহায়ত কাকতখন প্ৰস্তুত কৰা হৈছে।
২. কাকতখনৰ যোগেদি ছাত্ৰ-ছাত্ৰীয়ে অসমীয়া ভাষা-সাহিত্যৰ পৰম্পৰা আৰু পৰিৱৰ্তন সম্পৰ্কে জ্ঞান আৰ্জিব পাৰিব।

Major- 401

অসমীয়া গদ্য-সাহিত্য

১. অসমীয়া গদ্য সাহিত্যৰ ক্ৰমবিকাশ, বৈশিষ্ট্য আৰু বৈচিত্ৰৰ ধাৰণা দিবলৈ কাকতখন প্ৰস্তুত কৰা হৈছে।
২. অসমীয়া গদ্য-সাহিত্যৰ অধ্যয়নে অসমীয়া গদ্য-সাহিত্যৰ ক্ৰমবিকাশত ভৱিষ্যতৰ অসমীয়া ভাষাটোৰ পৰিবৰ্তনৰ সম্পৰ্কে ছাত্ৰ-ছাত্ৰীয়ে সৰ্তক হৈ কাম কৰিবলৈ সুবিধা পাব।

Major- 601

ভাষা-সাহিত্য অধ্যয়নৰ বিবিধ দিশ

১. বিভিন্ন মাধ্যমৰ বাতৰি পৰিৱেশন, পাণ্ডুলিপি সম্পাদনা বিজ্ঞাপন আদিৰ দৰে ভাষা-সাহিত্যৰ ব্যৱহাৰিক দিশবোৰৰ প্ৰতি লক্ষ্য ৰাখি এই কাকতখন যুগুত কৰা হৈছে। যাতে ছাত্ৰ-ছাত্ৰীসকলে তেনে বিষয়বোৰৰ সম্যক জ্ঞান লাভ কৰিব পাৰে।
২. ওপৰত উল্লিখিত প্ৰেচাদাৰী বৃত্তিসমূহত পাঠ্যক্ৰমখনৰ শিক্ষাই ছাত্ৰ-ছাত্ৰীসকলক ভৱিষ্যতৰ দিনত মকৰল হোৱাত সুযোগ দিব।

Program Specific Outcome: BA Assamese

On completion of BA (Economics), Students are able to:

১. অসমীয়া বিষয়ৰ মৌলিক ধাৰণাসমূহৰ লগত পৰিচয় হ'ব।
২. অসমীয়া ভাষা-সাহিত্য-সংস্কৃতিৰ ভিন্নমুখী দিশসমূহৰ লগত পৰিচয় ঘটিব।
৩. অসমীয়া সৃষ্টিশীল সাহিত্যৰ গতি-প্ৰকৃতিৰ লগত পৰিচিত হোৱাৰ সুযোগ লাভ কৰিব।
৪. অসমীয়া ভাষা-সাহিত্য-সংস্কৃতিৰ সাম্প্ৰতিক ধাৰণাসমূহৰ লগত পৰিচিত হোৱাৰ লগতে এই পৰিচয়ৰ জৰিয়তে তেওঁলোকে ভৱিষ্যতে অসমীয়া ভাষা-সাহিত্য-সংস্কৃতিৰ চৰ্চা-কৰ্ষণৰ বাবে পথ সুনিশ্চিত কৰিব পাৰিব।
৫. সম্প্ৰতি গণসংযোগৰ দিনত ছাত্ৰ-ছাত্ৰীয়ে 'যোগাযোগ কলা'ৰ মাধ্যমসমূহৰ লগত পৰিচয় লাভ কৰিব পাৰিব। তদুপৰি গণসংযোগৰ শিক্ষাৰে তেওঁলোকে অনাগত দিনত জীৱিকাৰ পথো সুনিশ্চিত কৰিব পাৰিব।
৬. অসমীয়া সৃষ্টিশীল সাহিত্যৰ লগতে বিশ্বসাহিত্যৰ লগত পৰিচয় লাভ কৰি অসমীয়া সৃষ্টিশীল সাহিত্যৰ গতি-প্ৰকৃতিৰ উমান ল'ব পাৰিব আৰু অসমীয়া সৃষ্টিশীল সাহিত্যৰ উন্নতিকল্পে আত্মনিয়োগ কৰিব পাৰিব।

Programme Outcomes
Department of Botany
Semester I (Major)

PO:- 1. Basic knowledge of thallus morphology reproduction and evolution of lower cryptogams algae.

PSO:-1. General characters classification and economic importance of Algae; its phylogeny & distribution.

PSO:-2. Vegetative structure cell structure pigment algal chromatophore range of thallus structure.

PSO:- 3. Reproduction and pattern of life cycle.

PSO:-4. Comprehension knowledge algal classes and genera.

PO:- 2. Basic knowledge of thallus morphology reproduction and evolution of fungi and plant pathology.

PSO:-1. Salient feature of fungi cell structure and fungal nutrition.

PSO:-2. Classification and distribution of fungi.

PSO:-3. Comparative account of structure methods of reproduction and mode of spore dispersal of Fungi.

PSO:-4. Economic importance of fungi.

PSO:-5. Comprehension knowledge of structure and life history of groups and genera.

PO:-3. Basic knowledge of thallus of lichens.

PSO:-1. General account of cell structure.

PSO:-2. Reproduction symbiotic association nutrition and economic importance.

PO:-4. Practical based on PO-1, PO-2, PO-3.

Semester II

PO-1. Fundamental knowledge on the structure morphology reproduction alternation of generation spore dispersal mechanism of plant pathology.

PSO:-1. Principle of plant pathology.

PSO:-2. Host parasite interaction.

PSO:-3. Disease management.

PSO:-4. Study of disease method of control.

PO:-2. Fundamental knowledge of Bryophyte.

PSO:-1. General account classification distribution in India.

PSO:-2. Comparative account of the gametophyte.

PSO:-3. Evolution of sporophyte and spore dispersal mechanism.

PSO:-4. Comparative knowledge of structure life history and economic importance.

Semester III

PO:-1. Pteridophyte Gymnasperm and Paleobotany.

PSO:-1. Comparative account of structural morphology, distribution, anatomy, reproduction and evolution of seed habit of Pteridophyte.

CO:-1. General classification, organization and affinities, distribution in India and economic importance.

CO:-2. Stellar organization in pteridophyte.

CO:-3. Evolution of sporophyte and sporophylls.

CO:-4. Homospory and heterospory in evolution of seed habit.

CO:-5. Comparative study of life history of genera's.

PSO:-2. Comparative account of structural morphology distribution, anatomy, reproduction of Gymnasperm.

CO:-1. Classification distribution & economic importance.

CO:-2. Comparative and evolutionary study of genera's.

PSO:-3. Paleobotany study.

CO:-1. Elementary knowledge of paleobotany.

CO:-2. General account of anatomy and reproduction of fossils of pteridophyte and gymnosperm.

PSO:-4. Practical based on PSO-1, PSO-2, PSO-3.

PO:-2. Microbiology and Biotechnology.

PSO:-1. To introduce the knowledge of microbiology.

- CO:-1. Development of microbiology.
- CO:-2. Classification of micro- organism.
- CO:-3. Isolation and cultivation of micro-organism.
- CO:-4. General ecology of micro-organism.
- CO:-5. Microbiology of food, milk and water.
- CO:-6. Importance of micro-organism for human welfare.

PSO:-2. Biotechnology.

- CO:-1. Introduction, scope of biotechnology.
- CO:-2. Genetic engineering and its merits & demerits.
- CO:-3. Tissue culture.
- CO:-4. Basic knowledge of industrial microbiology.

PSO:-3. Practical based on PSO-1 and PSO-2.

Semester IV

PO:-1. Morphology and Taxonomy of Angiosperms.

PSO:-1. Fundamental of Angiosperm, morphology and classification of various taxa.

CO:-1. Detail study of (i) Carpel polymorphism, (ii) Origin of angiosperm , (iii) Evolution of inflorescence & (iv) Role of morphology in classification.

CO:-2. Plant classification.

CO:-3. Binomial nomenclature, generic name, specific epithets, citation, herbarium preparation.

CO:-4. Modern taxonomy.

CO:-5. Detail knowledge of different families.

PSO:-2. Practical based on PO-1.

PO:-2. Cell Biology and Modern Laboratory Technique.

PSO:-1. Fundamental knowledge of cell biology.

CO:-1. Cell theory, eukaryotic and prokaryotic cell.

CO:-2. Organization of cell and function of cell organelles.

CO:-3. Cell formation.

CO:-4. Nucleoprotein and nature of genetic material.

CO:-5. Cell adhesion, membrane transport, signal transduction (G protein).

PSO:-2. Fundamental of Modern Laboratory Technique.

CO:-1. Working principle, operation and application of biological science.

CO:-2. Microscopy.

CO:-3. Chromatography.

CO:-4. Spectrophotometer.

CO:-5. P^H meter, BOD, incubator, autoclave, Laminar flow, hot air over.

CO:-6. Basic knowledge of computer.

PO:-3. Practical based on PSO-1, PSO-2.

Semester V

PO:-1. Development and Reproduction in Angiosperm.

PSO:-1. Fundamental knowledge of structural and functional aspects of cell and cell organelles.

CO:-1. Organization of tissues.

CO:-2. Stelar body, leaf trace and leaf gaps.

CO:-3. Secondary structure of root and stem.

CO:-4. Anomalous secondary growth.

CO:-5. Anomalous system of tissues, anatomy of C₃ and C₄ plants.

PSO:-2. Fundamental knowledge of reproduction.

CO:-1. Development of male and female gametophyte.

CO:-2. Fertilization, development of embryo.

CO:-3. Development of endosperm.

PSO:-3. Practical based on PSO-1 and PSO-2.

PO:-2. Genetics & Plant Breedings, Biostatistics.

PSO:-1. Basic knowledge of plant genetics.

CO:-1. Mendel's law, concept of alleles and multiple genes.

Mendel's law, concept of alleles and multiple genes.

CO:-2. Linkage, crossing over and gene mapping.

CO:-3. Sex determination.

CO:-4. Cytoplasmic inheritance and kappa particle inheritance.

CO:-5. Chromosomal and gene mutation.

CO:-6. Basic ideas of gene, genetic engineering, gene cloning, concept of trans gene.

CO:-7. Human genetics.

PSO:-2. Plant breeding.

CO:-1. Methods of Reproduction.

CO:-2. Principle and methods of plant breeding, concept of mutation breeding.

CO:-3. In victor culture, crop improvement.

PSO:-3. Biostatics.

CO:-1. Application of statistics in Biological Science.

CO:-2. Measurement of central tendency.

CO:-3. Test of significance, probability etc.

PSO:-4. Practical based on PSO-1, PSO-2 and PSO-3.

B.A. Education

Department of Education- After successful completion of three year degree programmed in education a student should be able to

Programme specific outcomes-

P.SO -1- To get admission post graduation courses in education.

P.SO-2- To write scientific case-study report.

P.SO-3- To interpret data and make project/research

P.SO-4- Understand the teacher methods and lesson planning.

P.SO-5- To do experiment of psychology scientifically.

P.SO-6- Make use of personality theories in daily practice.

P.SO-7- Analyze and understand abnormal human behavior in practice.

Course- Outcomes

After completion of these course students should be able to

1. Philosophical foundation in education(M-I)-

- I. Understand the basic concepts, principles of philosophy.
- II. Understand similarities and differences between philosophy and science.
- III. Understand various schools of philosophy- idealism, naturalism,
- IV. Understand Indian philosophies- its values and contribution to Indian social life.

2. Sociological foundation in education(M-I)

- I. Understand the basic concept, meaning of sociology.
- II. Understand social process socialization, social change and impact of education on society.
- III. Understand the difference of communities in special reference to north east region.
- IV. Understand the impact of economic development on society.

3. Psychological foundation in education

- I. Understand the meaning, concept and definition of psychology.
- II. Understand the stages of human development. Health and hygiene, mental development etc.
- III. Understand the learning theories and principles.
- IV. Know habit formation, in stench and emotions of human being, personality dev. And social development.

4. Educational measurement and Education

- I. Understand measurement tools of measurement, continuous and comprehensive evaluation.
- II. Understand the psychological experiments and various process of evaluation
- III. Understand the techniques of experiment of human personality, intelligence, aptitude.
- IV. Understand the statistical analysis of data- mean, median, mood, quality deviation, standard deviation etc.
- V. Understand the graphical representation of data/data presentation.

5. History of Indian education

- I. Understand the historical development of Indian education from ancient period to modern period.
- II. Understand about the recommendation of various commissions for the development of Indian education.
- III. To learn about the indigenous institutions and its contributions to the society.

6. Great educator and educational thought

- I. Understand the life history of the education list of Indian and western countries.
- II. To learn about the education thought of the educationists.
- III. To learn about the current issues of elementary secondary and higher education.
- IV. To learn about the impact of education of national integration and international understanding.
- V. To learn about the education of special groups.

7. Child psychology and child

- I. Understand the growth and development of the child.
- II. To learn about the ECCE (early child care and education)
- III. To know about common childhood problems
- IV. Understand and counseling for the child.
- V. To learn the role of education in the development of the child from pre birth to childhood.

8. Education in post independence India

- I. To know the educational development in post independence India.
- II. To learn the constitutional provisions of education problems of the constitution.
- III. Understand the current issues of education.
- IV. To learn about national policy on education-1986

9. Educational technology

- I. Understand basic concept of hardware and software, institutional technology, instructional technology etc.
- II. To learn about the role of communication technology in classroom barriers of communication etc.
- III. Understand innovations in educational technology.
- IV. To know about CAI, ICT and impact on education.
- V. Understand the teaching objectives in behavioral terms.

10. Techniques & methodology of teaching practical

- I. Understand teaching learning principles, macro micro teaching.
- II. To know the methods of teaching
- III. To learn teaching practices, lesson planning.

11. Laboratory practical and field report

- I. Understand the psychological experiments on memory, attention, personality, aptitude.
- II. To prepare report on a specific topic concerned with the society.
- III. To learn field survey prepare questionnaire, interview schedule & collect data, data analysis and communicate with the society.
- IV. Learn the methodology of a project report.

12. Educational management

- I. Understand educational management.
- II. Learn about educational planning, school managerial
- III. Understand about the human, material and financial resources.
- IV. Learn about educational supervision and the role of teacher, headmaster supervisor and inspector
- V. Understand educational finance- investment, consumption, cost and production in education.

13. World perspective

- I. Understand the similarities differences of education in different countries- USA, UK, India and Japan.
- II. To know historical of education, methods of comparative studies and national factors affecting education.
- III. To learn about the elementary, secondary higher education organization, administration, finance objectives curriculum, structure and emerging trends.

14. Emerging trends in Indian education

- I. Understand about the constitutional provisions related to education
- II. Learn about all issues and challenges of preprimary to higher education.
- III. Know about alternate education technical, vocational and distance education, alternative schools
- IV. Understand about the problems of Indian education.

COURSE OUTCOME OF BA ENGLISH MAJOR

SEMESTER-1:

PAPER 101: HISTORY OF ENGLISH SOCIETY AND CULTURE I

Through the first paper the new comers are acquainted with the signposts of English Society and Culture from the Anglo-Saxon to the Restoration period of England. They are guided to acquaint themselves with events, ideas, personalities and taxed that formed the backbone of each period. At the same time they are also given to learn and draw parallel as related trends in the continent.

SEMESTER-II:

PAPER 201: HISTORY OF ENGLISH SOCIETY AND CULTURE II

This paper carries forward the same agenda through studying the period following Restoration to the modern period. With the completion of paper II the students accumulate an overall idea of the nature and course of British Socio-political history and literature written as those backdrops. Thus they become efficient to devote themselves to study of major literary texts. The students also have to study the movements and issues that define the ethos of the periods under scrutiny.

SEMESTER-III:

PAPER 301: HISTORY OF ENGLISH LANGUAGE, CRITICAL TERMS, AND CLASSICAL MYTHOLOGY

In part A this paper acquaints the students with the history of English language , both synchronic and diachronic. They also learn about the different elements such as influences, borrowings, and changes. In Part-B, Unit I students are given a fair idea of the common critical terms and concepts in order to hone their critical skill and sensibility. In the same part the students also get an idea of major events and characters in classical mythology to help them connect to western literature as part of larger socio-cultural contexts.

PAPER 302: READING POETRY

By discussing the major poets and poems from Shakespeare to Eliot, the students are familiarised with the progress, development, various styles and issues undertaken by the poets and thus exposed to the rich variety of English poems.

SEMESTER IV:

PAPER 401: READING PROSE AND FICTION

The teacher facilitates the students with major essayists, non-fictional prose writers, and novelists from Bacon to Jane Austen. They are kept abreast of movements and issues that define the ethos of the texts under scrutiny.

PAPER 401: READING FICTION

This paper on English fiction acquaints the students with major English novels from Dickens to Lawrence. The selective text enables to give a knowledge to the students about the different socio-political contexts of their origin and reception. While Unit I helps the students to keep abreast of movements that mark the growth of the English novel, the rest of the units make them acquainted with issues that define the ethos of the texts under scrutiny.

SEMESTER V:

PAPER 501: READING DRAMA

This paper on drama acquaints the students with English drama from Marlowe to Beckett, bringing into focus the cultural contexts of their production and reception. The Unit I of this paper makes the student familiar with the movements that mark the growth of English drama, the rests gives them an exposure to the issues that define the ethos of the texts under scrutiny.

PAPER 502: CRITICISM I

This paper being on criticism, the students are introduced to the major critical texts from the classical period as well as from the Renaissance and the neo-classical period in order to contextualize critical terms and frames of reference that becomes useful for the understanding and analysis of literary texts. All the units brings to the fore the movements and issues that define the critical temper of the texts under scrutiny. This finally helps them to understand the common trajectory of growth of western literary criticism.

PAPER 503: GREAT EUROPEAN THINKER

Acquainting the students with major philosophical texts from the early modern period to the twentieth century, this paper on the great European thinkers helps the students to contextualize philosophical terms and frames of reference. This becomes useful for the understanding and analysis of literary texts. Each unit is prepared in a way to require to keep

abreast of the movements and issues that define the critical temper of the texts under scrutiny to help them understand the common trajectory of critical inquiries in philosophical as well as literary-critical texts.

PAPER 504: INDIAN WRITING IN ENGLISH

This paper acquaints the students with seminal Indian Writing English texts. This helps them to understand the complexities of Indian life and culture as well as the relevance of Indian Writing English in the contemporary world. The first unit gives a bird's eye view of the course and development of Indian Writing in English and the rest units expose them to study issues that define the Indian ethos of the texts under scrutiny.

SEMESTER VI:

PAPER 601: CRITICISM II

Through this paper the students are acquainted with major critical texts from the Romantic period to the twentieth century. They are contextualized to the critical terms and frames of reference that enabled them to understand and analyse the literary texts. The students are kept abreast of movements and issues that define the critical temper of the texts under scrutiny. This also helps them to understand the various trajectories of growth of literary criticism.

PAPER 602: LITERATURE OF THE USA

This paper acquaints the students with the seminal American texts and helps them understand the complexities of American culture as well as the relevance of the American ideals to the Indian situation. The students are taught to keep abreast of the history and reception of the Literature of the USA, and also be familiar with the ethos of America through the study of prescribed texts.

PAPER 603: LITERATURE IN THE POST COLONIAL WORLD

In dealing with this paper the students become acquainted with seminal postcolonial novels in order to help them understand the complex negotiations between the colonizer and the colonized and the transformations in societies and cultures in India, African region.

PAPER 604: INTRODUCTION TO LINGUISTICS AND PHONETICS

By studying this paper the students get an introduction to some basic concepts associated with language. This also familiarizes the students with the sound system of English and English syntax that in turn stimulate them for effective communication in English.

DEPARTMENT OF ENGLISH

COURSE OUTCOME: B.A. ENGLISH

GENERAL ENGLISH PAPER I: SEMESTER 1

This paper imparts some of the basic skills in written communication to the students. Apart from learning the use of language, the students get an overall idea of different modes of writing and comprehension including analysis and interpretation. The learners get a fair idea for writing reports, notes, memos, analysing figures in table etc.

GENERAL ENGLISH PAPER II: SEMESTER 2

The objective of enabling the students to appreciating different kinds of creative writing is realised to a large extent. This paper also inculcates desirable social values. Since the literary texts are exploited by preparing supportive materials, so this facilitates the students for simultaneous development of language and communication skill as well.

GENERAL ENGLISH PAPER III: SEMESTER 3

This paper provides a fair knowledge of the major English poems from the Romantic to the Modern period by English, American and Indian poets. The students also get acquainted with other literary cultures beside English. This also develops in them a comparative idea of literature across the nation.

ALTERNATIVE ENGLISH PAPER I: SEMESTER 1

Familiarise the students with poems and a genre, they are taught to appreciate the culture and social background against which the poems were written. Apart from that, the learners develop command over the English language, and develop individual idioms.

ALTERNATIVE ENGLISH PAPER II: SEMESTER 2

The students are taught to appreciate different kinds of creative writing and inculcate desirable social values. This paper comprising only non fictional prose acquaints the student with the ideas of famous writers and thinkers. By drawing attention to the clarity of perception in each writer included in the paper, each writer acts as a guiding framework for the student in each of the idiom.

ALTERNATIVE ENGLISH PAPER III: SEMESTER 4

The students are familiarised with literary genre such as fiction and short stories. Going through them and taking assignments and exercise the students develop the skills necessary for appreciation and interpretation of literature. While the short stories opens up to them chapters of India's rich past, the novel 'The Old Man the Sea' by Hammingway introduces them to the American difference in literature. All together, they also introduce the students to different narrative styles and develop their own.

COMMUNICATION SKILLS: SEMESTER 3

This prepares the students for competitive examination. It enables them to develop skills and abilities necessary for their future academic and professional needs and interests. By systematic idly sequencing composition grammar and oral communication in both speaking and writing.

Department of Political Science

Program Schedule Outcomes-

O1. Students are able to

1. Serve as a Politician
2. Work as a teacher in schools and high school.
3. Serve a political party member, political adviser and well citizen in Indian political system.
4. Can admit to M.A Politics, LLB, MSW, and MBA.
5. Works in NGOs.
6. Can prepare for competitive exams.

B.A 1ST SEMESTER

Western Political Thought

After completion B.A students enable to understand about-

1. The classical political thoughts by the study of political philosophy of Plato, Aristotle, political philosophy developed by Machiavelli in the era of renaissance and about contractual political philosophy on origin of the state forwarded by Hobbes, Locke, and Rousseau.
2. Able to understand comparative concept about justice, freedom, citizenship and sovereignty in the works of Machiavelli Hobbes, Locke and Rousseau.
3. Can understand about the different versions of the state o nature forwarded by Hobbes, Locke and Rousseau.
4. Able to understand about J.S.Mill's theory on utilitarianism and its application in modern society and state.

B.A 2ND SEMESTER

Indian Government and Politics

1. Enable to understand about the philosophy of Indian constitution.
2. Can understand causes and impact of British colonial rule in India.
3. Enable to understand about the different phases of Indian national movement.
4. Enable to create patriotic feeling among the young youths.
5. Enable to understand about the various Indian government acts, their provisions and reform.
6. Enable to understand about the salient features of the constitution of India.
7. Enable to appreciate socio-economic political factors leading to freedom struggle, fundamental rights and duties and directive principles of state politics.
8. Enable to evaluate the functioning of political parties in India and also enable to identify how electoral rules effect election outcome in India.

B.A 3RD SEMESTER

Paper: Public Administration

1. Students enable to understand the activities of chief executive and morale in public administration.
2. Students enable to understand the importance of public administration for modern welfare states and the idea of new public administration.
3. Students enable to understand the composition and functions of union public service commission, state public service commission, recruitment, training, promotion, line agency, staff agency, auxiliary agency, and principles of organisation, financial administration and people's participation in administration.

B.A 3RD SEMESTER

Paper: International Relations

After completion B.A the students of political science in the paper international relations-

1. Have the opportunity to maintain positive diplomatic relations between countries.
2. Have the opportunity to prevent international conflict.
3. Have the opportunity to global visions.
4. Can take initiative in maintain international peace and tranquility.
5. Enable to understand issues about peace and war, amicable settlement of conflict.
6. Enable to prevent global terrorism.

B.A 5TH SEMESTER

Political Theory

1. Enable to understand the introduction and significance of political theory.
2. Enable to understand about the theories, approaches, concepts and principles of political theory.
3. Enable to interpret and assess formation regarding a variety of political theory.
4. Enables to evaluate the theories of origin of the.....

Program Specific Outcomes: Geography

On completion of the BA (Geography) students are able to

1. Serve as a Geographer.
2. Work as teacher in Primary and High Schools.
3. Serve as conservator in forest, Soil and Agricultural Dept.
4. Work in disaster and water resource management.
5. Work as demonstrator in Higher Secondary and colleges.
6. Serve as cartographer in Survey of India and in State Govt.
7. Serve as surveyor.
8. Work in N.G.O.
9. Can prepare for competitive Examination.

Course Outcomes in Geography

1st Semester BA

GGRM:101: Introduction to Geography

1. Understand the concept, nature and scope of Geography.
2. Understand the distinctiveness of Geography in Social Science as well as in Natural Science.
3. Understand the historical back ground of the subject.
4. Understand Man environment relationship and concept of determination and Possibility.
5. Understand idealism in Geography.
6. Understand the concept of Geomorphology and its relation with other science.
7. Understand basic concept of Geomorphology.
8. Understand Geological History of Earth.

2nd Semester BA (GEOGRAPHY)

GGRM:201: Physical Geography

1. Understand the origin and evolution of the earth primary relief features by different theories in the subject industry Place tectonics.
2. Understand the concept of Interior of the earth and concept of Isostasy, Interior of the earth and concept of Isostasy.
3. Understand about the Geographic agents and processes.
4. Evaluate the fundamental view of Davis and Penck.

5. Understand land form associated with fluvial, glacial and coastal and Karst regions.
6. Understand concept of Bio-Geography, distribution of plants, animals and their relation to soil, climate, vegetation and human activities.
7. Understand the concept of soil forming processes, classification and distribution, soil erosion, conservation.
8. Understand soil types of India and Assam.
9. Understand surface configuration of ocean floor and Bottom configuration of the Atlantic, Pacific and India Ocean.
10. Understand Salinity and temperature of ocean water and ocean current.
11. Understand the formation of coral reefs.
12. Importance of ocean as store house of resources.

3rd Semester BA(GEOGRAPHY)

GGRM 301: Climatology

1. Understand the difference between weather and climate.
2. Understand structure and composition of atmosphere.
3. Understand heat balance of Heat budget and its factors.
4. Identify atmospheric pressure belt and planetary wind systems, local winds, monsoon and Jet Stream.
5. Understand humidity, evaporation and condensation.
6. Understand concept of hydrological cycle, types of precipitation and rainfall distribution.
7. Understand Air mass, fronts and development of cyclones in tropical and temperate region.
8. Classify climates according to Koppen's and Thornthwait's.
9. To Understand Indian climate and their relation to plant and animals.
10. Importance of climate change and its impact human activities.

GGRM 302 & 304 : Practical

1. Understand Toposheets of India.
2. Interpret Toposheets and its components.
3. Prepares Transact chart.
4. Draw profiles and interpret them.
5. Understand cartographic representation of elate.
6. Could delineate drainage basin, drainage ordering by Horton's and Strahler's methods.
7. Could draw Longitudinal and aces profile of River.
8. Could use Rota meter Plain water.
9. Could find drainage density drainage frequencies bifurcation ratio.

GGRM 303: Environmental and Economic Geography

1. Understand Geography and Man Environment Relationship in historical perspective.
2. Understand the concept of Environmental degradation pollution and conservation.
3. Understand the importance of Environmental impact Assessment and Management and disaster management funders of UNDP, UNEP.

4th Sem B.A. (Geography)

GGRM: 401: Human Geography

1. Understand Human Geography and its history.
2. Understand Approaches in Human Geography.
3. Could Explain Environmental determination, Possibilism , Neo determinism and cultural or social determination.
4. Understand Human adaptations in different environmental and physical conditions, particularly the tribes like Gond, Bhils, and Khasis etc.
5. Could explain Human development concept and could measure it.
6. Understand Human evolution distribution.
7. Could explain Race and Classify Indian people.
8. Understand origin and growth of settlement, its type and origin and towns of India can classify accordingly.

GGRM: 403: Economic Geography

1. Could classify Industry.
2. Could realize factors of industrial location and understand theories of Weber and Losch.
3. Understand concept of tourism and its potentiality in India.
4. Understand the factors of agriculture.
5. Could explain Agricultural Regions of the World.
6. Von Thunen's agricultural location theory could explain.
7. Realize the importance of transportation as a factors of resource utilization.
8. Understand the concept of transport Network.

GGRM: 402 &404: Practical

1. Could prepare choropleth map using socio-economic data.
2. Population Growth Curve and Age Sex Pyramid both for developing and Developed countries could prepare and analyzed.
3. Become able to write / prepare Field Report/Excursion Report and Project Reports.
4. Could draw and explain Hypsometric and Bathymetric curves.

5th SEMESTER (GEOGRAPHY)

GGRM:501: Regional Geography of India (Part-I)

Students got comprehensive idea about various geographical aspects of India and North East India including Geology, Physiography, climate, soil, vegetation, minerals and power resources.

GGRM:503: Regional Geography of the world (Part-I):

Students got knowledge with the geographical aspects of three continents i.e Asia, North America and South America and South America.

GGRM 505: Political Geography and Geopolitical Issues:

1. Understand about the Political Geography and important political issues.
2. It aware the students on the geopolitical aspects of the world in general and the India and north East India in particular.

GGRM:507: Regional Planning and Social Geography:

1. Understand social geography, social space , society, environment, culture and concept of modernization.
2. Cultural Regions of the World could ascertain.
3. Understand concept of central place and theory of Christlar.
4. Region, regionalization and Planning Regions, concept of land use and land use planning could explain.
5. Understand resource base and development strategies of India, N.E. India and Japan.

GGRM: 502,504,506 and508: (Practical):

1. Could draw Traffic Flow and Isochronic cartogram and mean centre of gravity.
2. On the basis of field study project report could prepare.
3. Relief maps could draw on Wentworth's and Smith's method.
4. Understand and could find Shape Index
5. Understand and could analysed strategic models of Mackinder and Spykman.
6. well verse with SAARC and ASEAN countries.
7. Understand new methods of representation of statistical data.

6th SEMESTER

The students could understand and able to

GGRM:601: Map Projection and Cartographic Methods:

1. Understand and explain about map projection, its classification and choice of map projection.
2. Could draw different map projections
3. Understand basic principles of surveying
4. Understand surveying procedures of plane table, prismatic compass, theodolite and dumpy level surveying etc.
5. Understand concept of remote sensing and aerial photography, GPS, GIS, Remote sensing Platforms satellites, Radar etc.

603: Regional Geography of India (Part II)

1. Understand regarding the economic and socio-cultural structure of India Economy of N.E. India.
2. Understand agriculture, industries transport ,population growth, settlement pattern of India and N. E. India

605: Regional Geography of World (Part II)

Understand and acquaint geographical knowledge about Africa, Australia & Newzealand and Europe.

607: Geographical Thoughts and Quantitative Methods

1. Understand about the history.
2. Understand contemporary Quantitative methods and techniques used in Geography in today's context.

602,604,606,608: Practical

- 1 Understand and could construct different types of map projections.
- 2 Understand and develops skills regarding the use of modern techniques like interpretation and comparison of satellite imagery.
- 3 Understand about the use of now methods in statistical data representation like near neighbor Analysis, Principal component Analysis, Location Quotient Lorenz curve, time series analysis.
- 4 Could survey using plane Table, Prismatic compass, Dumpy level, theodolite and GPS etc.

Department of Chemistry
Program Outcomes: BSC Chemistry

Department of Chemistry: After Successful Completion of 3 Years degree Course in Chemistry a Student Should be able to;

PO:-1. Demonstrate Solve and an Understand of major concept in different discipline of Chemistry.

PO:-2. Employ Critical thinking and scientific knowledge to design carry out, record and analyze the results of chemical reaction.

PO:-3. Create an awernace of impact on environment, society and development outside the Scientific Community.

PO:-4. Detected the green route for chemical reaction for sustainable development.

PO:-5. Produce scientific temporment in students and outside the Scientific Community.

PO:-6. May appear joined as BSC science teacher in ME and High school.

PO:-7. May appear in competitive examination like ACS, IAS, UPSC etc.

PO:-8. Can absorb in OIL India, ONGC, Gas Cracker and other industries.

Program Specific Outcome (PSO)

PSO:-1. Gain the knowledge of Chemistry through theory and Practical.

PSO:-2. To explain nomenclature, Stereo-chemistry, Structure, reactivity and mechanism of Chemistry compound.

PSO:-3. Use modern chemical tools, models, charts and equipments.

PSO:-4. Understand laboratory Practices well and know about safety.

PSO:-5. Develop research Oriented Skill.

PSO:-6. Make aware and handle Sophisticated instruments/equipments.

Course Outcome BSC Chemistry

Semester I

After completion of this course students to be able to understand Physical Inorganic and Organic Chemistry in advanced/treatment.

Paper Code: 101

Physical Chemistry

CO:-1. Deduce kinetic gas equation different types of speed of gas molecules and their molecular properties different equation of states.

CO:-2. Deduce different properties of liquids, Vapour pressure, Surface tension, Viscosity, Preacher, liquid crystal, Newtonian and Non-Newtonian liquid.

CO:-3 Deduce basic laws of crystallography, study about crystal of different methods and crystals structure of NaCl, KCl etc.

Paper Code: 101

Inorganic Chemistry

CO:-1. Learn about effective nuclear charge, Pauling, Mulliken's and Allred Rochow scales.
CO:-2. Learn about different types of bonds in molecules. Valence Bond (VB) and Molecular orbital theory (MO) VSE PR theory and its application.

Paper Code:- 101

Organic Chemistry

CO:-1- Know about classification and nomenclature of organic compounds. Hybridization, Resonance, Homo and heteronuclear fission, carbocations, carbonions, etc.

CO:-2. Concepts of asymmetry, dissymmetry, Walden inversion, asymmetric synthesis etc.

CO:-3. Determination of configuration of geometrical isomer ion in oximes are alicyclic compound.

Semester II

Course Outcomes: To Provide the students importance in chemical thermo-dynamics non transition metals, metals with different types of organic reaction.

Paper Code: 201

Physical Chemistry

CO:-1. Learned about different Properties of thermodynamic system Different laws of thermodynamics Thermo chemistry and its different laws bond energy and bond dissociation energy.

CO:-2. Learned about different types of electrolyte degree of ionization, kw, PH scale, common ion effective theory of acid base titration.

Paper Code: 201

Inorganic Chemistry

CO:-1. Electronic structure properties and comparative study non transition elements compounds of Xenon, Boron, Carbon, silicon phosphorus etc.

CO:-2. Methods of purification—refining of metals, extraction of different metals and their compounds such as Cr, Mn, Mo, Co, Ni etc.

Paper Code: 201

CO:-1. Know about chemistry of alkanes with special emphasis on different reaction.

CO:-2. Learn about carbon carbon Pi bond, reaction of alkenes alkynes cycloalkanes cyclohexane etc.

CO:-3. Study about Aromatic hydrocarbons, electrophilic aromatic substitution.

Semester III

Course Outcomes: To understand Co-ordination chemistry mechanism and the importance of d and f block elements.

CHMM Course Outcomes

Paper Code: 301

Inorganic Chemistry

CO:-1. Co-ordination compounds nomenclature of complexes compounds VB bond, crystal field, MO, theories.

Magnetic Properties of octahedral complexes.

CO:-2. Inorganic reaction mechanism substitution reaction in octahedral and square planer complexes.

CO:-3. Chemistry of d and f block elements. Lanthanide and actinide contraction and separation of Lanthanide.

Paper MM- 302 (Practical)

Inorganic qualitative analysis of atleast five radicals containing interfering radicals like Phosphate, Borate, Flouride, Oxalate etc.

CHMM Course Outcomes

Paper Code: 303

Organic Chemistry

CO:-1. Chemistry of halogenatc hydrocarbons such as alkyl halides aryl halides and organometallic compounds of Mg and Li.

CO:-2. Chemistry of C-O bond alcohols, trihyobic alcohol, ether, epoxides etc.

CO:-3. Carbonyl compounds such as aldehyde and ketones.

CO:-4. Carbonylic acid and their derivatives, urea, urethanes etc.

Paper 304 (Practical)

CO:-1. Organic qualitative analysis determination of metting point, preparation of derivative.

CO:-2. Organic preparation like acetylation, Nitration, benzylation etc.

Semester IV

Course Outcomes: Elector chemistry is one of the topics that really revolutionized the world nowadays. This paper deals with this particular aspects.

CHMM Paper Code: 401

Physical Chemistry

CO:-1. Chemical thermodynamics second law, carnot's cycle, free energy function, Nernst heat theory.

CO:-2. Different types of conductivity different effects such as wien effect, debye-falkenhagen effect, etc. Conductometric titration.

CO:-3. Faraday's laws different electrochemical cell Measurement of e.m.f. free energy entropy entholpy of cell realtion Potentiometric titration lead-storage cell.

CHMM Paper Code: 402 (Practical)

CO:-1. To determine co-efficient of viscosity.

CO:-2. To determine the surface tension of solution.

CO:-3. Potentiometric titration.

CO:-4. Preparation of buffer solution.

CHMM Paper Code: 403

Organic Chemistry

Course Outcomes: This paper deals with active methylene compounds aliphatic and aromatic amines and hetero cyclic compounds.

CO:-1. Active methylene compound study about.

CO:-2. Nitrogen containing functional groups.

CO:-3. Amino acids and Proteins.

CO:-4. Polynuclear aromatic hydrocarbon.

CO:-5. Heterocyclic compounds.

CO:-6. Alkaloids.

Paper Code MM 404 (Practical)

Organic laboratory

CO:-1. Chromatographic separation of different mixtures and calculation of R_f value of the compounds. Such as amino acids or sugar by paper chromatography and phenols of dyes by thin layer chromatography (TLC).

Semester V

Course Outcomes: This Course is designed to impart the ideas of kinetics solution equilibrium and surface phenomenon amongst students.

CHMM Paper Code: 501

Physical Chemistry

CO:-1. Study about Zoology 1st, 2nd and 3rd order reactions half life periods etc. different of order mechanism of different gas phase reaction.

CO:-2. Study about the different colligative properties of dilute solution associated and dissociated solutes in solution.

CO:-3. System of variable composition and molar mass, Duhem-Margules equation etc.

CO:-4. Study about surface chemistry and surface phenomenon such as adsorption.

CO:-5. Study about electro kinetic phenomena Micelles, Emulsion and their structure.

Paper Code: 502 (Practical)

Physical Chemistry

CO:-1. PH metric titration is done for strong acid and strong base and weak acid and strong base.

CO:-2 Detⁿ_the Cancⁿ_of optically active compound by polarimetric method.

CO:-3. Conductometric titration.

Paper MM 503 (Theory)

Course Outcomes: The objective of the paper is to give knowledge on organometallic compound cluster and organic reagents in inorganic analysis.

CHMM Paper 503 (Theory)

Inorganic Chemistry

CO:-1. Organometallic compound Metal carbonls etc.

CO:-2. Transition metal cluster and nitrosyl compounds.

CO:-3. Error in quantitative analysis and indicates.

CHMM Paper 504

Inorganic Practical

CO:-1. Volumetric titration estimation of Ca²⁺ or Mg²⁺ by EDTA.

CO:-2. Extinction of total harness of water sample.

Paper 505

Course Outcomes: To aequire knowledge in different types organic reaction and to understand biochemistry.

CHMM Paper Code 505

Organic Chemistry

CO:-1. The students learn about pericyclic reaction and cyclo addition reaction.

CO:-2. Students about biomolecular Carbohydrates and general properties of glucose and fructose.

CO:-3. Students learn about nucleic acids and enzymes and enzymes as functions as catalyst.

CO:-4. Students learn about pharmaceutical compounds such as vitamin Drug action Analgesic Antipyretic Antacid etc.

CO:-5. Learn about Terpenes.

CO:-6. Students learn about organic reagents in inorganic analysis.

Paper 504 (Practical) Inorganic

CO:-1. Students estimation Ca²⁺ Mg²⁺ by EDTA.

CO:-2. Estimate of total hardness of different water sample.

Paper 506 (Practical) Organic

CO:-1. Students estimate the amount of glucose by titration with Fehling's solution.

CO:-2. Students analysis different adultrant in food sample such as turmeric mustard oil milk coffee etc.

Paper 507 (Theory)

Symmetry Quantum Chemistry

Course Outcomes: The objective of the paper to have knowledge on quantum mechanics with special reference to classical mechanics symmetry and bonding.

CHMM Paper MM 507 (Inorganic Practical)

CO:-1. Students estimate Ni^{2+} using DMG.

CO:-2. Estimate SO_4^{2-} by using Bach method.

Semester VI

Course Outcomes: Students understand different topics like photo chemistry macromolecules catalysis and statistical thermodynamics.

CHMM Paper 601 Physical Chemistry

CO:-1. Students learn about absorption of light quantum yield photo chemical reaction photo electric effect.

CO:-2. Students learn about different types of macromolecules or polymer polymerization etc.

CO:-3. Know about criteria of catalyst catalysis and their different types.

CO:-4. Know about phase diagram of one and two component system and different equations related to it.

CO:-5. Know about different statistical methods stirling approximation partition function and its different types.

Paper 602 Physical Practical

CO:-1. Study the rate constant of hydrolysis of sucrose by polarimeter.

CO:-2. Study the distribution of I_2 between CCl_4 and water.

Paper 603 (Theory)

Inorganic Chemistry

CO:-1. Learn about metal ion in biological system and metal ion in medicine.

CO:-2. Learn about supra molecular inferaction solid state reaction nonmaterial's etc.

CO:-3. Students learn about different types of chromatography such as paper thin layer gas etc.

CO:-4. Learn about industrial chemistry such as industrial water treatment cement and ceramics paints chemical toxicology etc.

Paper 604

Inorganic lab.

CO:-1. Inorganic preparation and crystallization of chrome alum Mohr's salt Potassium trioxalato chromate.

Paper 605

Organic Chemistry (Theory)

CO:-1. To study disconnection approach in organic synthesis.

CO:-2. Different types of spectroscopy such as IR, NMR etc.

CO:-3. To study about lipids.

CO:-4. To study about dyes.

CO:-5. To study about polymers.

CO:-6. Study about the introduction to the principle of green chemistry.

Paper 606

Organic Practical

CO:-1. Understand two step organic preparation such as benzoic to benzil to benzilic acid.

CO:-2. Aniline to acetamide to P nitroacetarilide.

Paper 607

Molecular Spectroscopy

Course Outcomes: This paper deals with the interaction of electromagnetic radiation with matter in various forms.

CO:-1. Know about interaction of electromagnetic radiation with molecules and various types of spectra.

CO:-2. Study about microwave spectroscopy.

CO:-3. Study about Infrared and Raman spectroscopy.

CO:-4. Study about electronic spectroscopy.

CO:-5. Study about spin resonance spectroscopy.

Paper MM 608

Project Work

Course Outcomes: In sixth semester students carry out projects work either at their respective college or any other R and D laboratory or university under guidance of a faculty member.

PROGRAMME SPECIFIC OUTCOME (PSO) OF HISTORY: (HIS)

PSO1: The course is designed to introduce the students to the basis of the discipline of history and acquaint them to the understanding of its sources in their varied forms, contents, uses and analysis.

PSO 2: The objective of this paper is to give a critical outline of the political history of Assam from the earliest times to its occupation by the English East India Company in the first quarter of the 19th century. It aims at acquainting the students with major and significant stages of developments in the course of the history of the Assam since early times.

PSO 3: The course aims at acquainting the students with the main currents of the socio political and economic developments in Assam during the colonial period.

PSO 4: The objective of this course is to acquaint the students with the socio economic history of ancient medieval and colonial Assam

PSO 5 : The paper intends to acquaint the students with the emergence of state system in north India , The development of imperial state structure , the state formation in the Deccan and in South India in the in the early period . The paper will apprise the students with the changes and transformation in polity, economy and society in the early period and the cultural interactions of early India with the South East Asian Countries.

PSO 6: The objectives of the paper are to acquaint the pupils with political development in India between 1200 to 1750. It requires the pupils to understand the states in Medieval Times, Administrative apparatus and society, economy and culture of India in Pre –modern period.

PSO 7: The objective of the paper is to highlight the major factors that led to the establishment and consolidation of the British role in India.

PSO 8: The objective of the paper is to acquaint the undergraduate students about the major trends and development that took place in Europe which ushered in the modern age.

PSO 9: The objective of the paper is to acquaint the undergraduate students about the

PSO 10: The objective of the paper is to acquaint the undergraduate students about the prospects and problems of Tourism industry in North-East India.

PSO 11: This course intends to acquaint the students with the new discipline of ecological and environmental history. It intends to familiarize them with the relation between ecology and human civilization with particular reference to post independence India. It also attempts to bring the pupils to the understanding of the social and economic conflicts emerging due to environmental factors.

PSO 12: The objective of this course is to describe the feminist movements, the key concepts in women's studies as well as sources for reconstructions of women's history. It will also describe the status of women in Indian society during the Vedic and medieval period. Further the reform movements as well as the role of women in Indian's freedom struggle will be dealt with.

PSO 13: The objective of this course is to introduce the students to the significant historical changes into the social political and economic life in the world beginning with the 17th century European enlightenment to the coming of globalization.

PSO 14: The objective of this course is to acquaint the students with the developments of Indian Science and technology since early times in order to create in them an understanding of the contributions towards the growth of scientific research and technological developments in the world.

COURSE OUTCOME OF HISTORY:

Course Code: HISM 101

CO I: Covers the Definition and scope of history and Historiography

CO II: About Vedic literature, Itihasa, and Purana, Inscription, Coins etc.

CO III: Indo-Islamic Historical Tradition- covers sultanate and Mughal as well as Colonial Period.

CO IV: Inscription of Early Assam-Raj Vamsawali and coins of medieval Assam.

CO V: Inscription of Medieval Assam-Buranji tradition, Accounts of Travel Writer, Colonial Accounts.

Course Code: HISM 201

CO I: State formation in Early Assam and the dynastic history of Pragjyotisha-Kamrupa and downfall of the Kingdom.

CO II: Political condition of the Brahmaputra valley at the time of the advent of the Ahoms.

CO III: State formation in Brahmaputra Valley and Expansion of the Ahom Kingdom.

CO IV: Mughal Invasion of 17th century.

CO V: The Burmese invasion and Decline of the Ahom Kingdom.

Course Code: HISM 301

CO I: Political condition in Assam on the eve of the British Rule.

CO II: The 1857 revolt and its aftermath.

CO III: Peasant uprising in the 19th century Assam and Growth of National consciousness.

CO IV: Government of India Act 1919- Diarchy on trial in Assam

CO V: Quit India Movement in Assam- Covering Cabinet Mission plan and grouping controversy.

Course Code: HISM 302

CO I: Social and Economic History of Ancient Assam, Covering Agriculture, Trade and Medium of Exchange.

CO II: Society in Medieval Assam.

CO III: Economy in medieval Assam.

CO IV: Economy in colonial Assam with plantation economy of the Tea Industry.

CO V: Society in colonial Assam covering growth of modern Education.

Course Code: HISM 401

CO I: Indus valley civilization, Rig Vedic and Later Vedic period.

CO II: Rise of new religious movements in north India- Jainism And Buddhism..

CO III: The Muryans, Sungas and Cheddi.

CO IV: The Gupta Empire and post Gupta Period.

CO V: Literature Society and culture in South India

Course Code: HISM 402

CO I: Foundation and consolidation of Sultanate- conquest and administration.

CO II: Decline of the Sultanate and Rise of Provincial Kingdom.

CO III: Foundation of the Mughal Empire- covering the entire period.

CO IV: Downfall of the Mughal Empire and rise of Maratha Power.

CO V: Bhakti movement in India.

Course Code: HISM 501

CO I: Political condition in India in posts Mughal period and the establishment of the British rule.

CO II: Expansion and consolidation of the British rule relation with the Indian status.

CO III: Lord Bentinck – his reforms and growth of progressive idea in India.

CO IV: The revolt of 1857 and the growth of national awaking in India.

CO V: Growth Revolutionary Terrorism and partition of India.

Course Code: HISM 502

CO I: Covering Feudalism, Renaissance, Reformation and Counter Reformation in Europe.

CO II: Colonial Expansion and impact of colonial expansion in Europe.

CO III: Absolute monarchy in France, Spain and England.

CO IV: Mercantilism and Enlighten Despotism in Russia, Prussia, Austria.

CO V: Development of Capitalism and Rise of Napoleon Bonaparte- his Policies and Downfall.

Course Code: HISM 503

CO I: The congress of Vienna and Assessment of the Congress.

CO II: Quadruple Alliance, Holy Alliance.

CO III: Unification of Italy, Germany.

CO IV: Russia and the Czar – Full of Czadan Revolution of 1917.

CO V: Political Condition of Europe on the eve of the First World War.

Course Code: HISM 504

CO I: Tourism Meaning and Significance.

CO II: Remain of Assam including Ahom Architecture.

CO III: Temple Architecture of Assam.

CO IV: Festivals based on ethnic cultural including state culture and Bhaona.

CO V: Places of tourist interest in North East India.

Course Code: HISM 601

CO I: Emergence of Environmental History as a branch of History.

CO II: Ecological napping of Indus Valley Civilization.

CO III: British Forest Policy in India and its impact.

CO IV: Conservation Policies in post independence period and Environmental Movements.

CO V: Impact of plantation Economy.

Course Code: HISM 602

CO I: Key concept in women status covering Gender, Patriarchy and Sexual Division of Labour.

CO II: Women in Ancient, Medieval and Subsequent period.

CO III: Women social reform movement in 19th century India and development of women's education

CO IV: Development of women's and women in Freedom struggle organization.

CO V: Women in Freedom struggle in North East India.

Course Code: HISM 603

CO I: Definition, Nature and Characteristic of Revolution.

CO II: Age of Enlighten, America war of Independence and the French Revolution.

CO III: Industrial Revolution, Print Revolution and its impact in society

CO IV: The revolution of Russia and China in 19th and 20th century.

CO V: Green Revolution in India information Technology and Globalization and its impact.

Course Code: HISM 604

CO I: History of science and technology meaning scope and importance.

CO II: Science and technology in the medieval period and social and cultural response to technological change.

CO III: Crafts and Technological Developments in Assam in India pre Colonial Time.

CO IV: Science and Technology in colonial period and introduction of western and modern science and technology.

CO V: Indian response to western science and Indian Nationalism.

Department of Physics

PROGRAMME OUTCOME: B.Sc. PHYSICS

Department of Physics	At the end of the three year degree course in UG programme the students should be able to:
Programme Outcomes	<ol style="list-style-type: none"> 1. Have a heart-felt satisfaction for opting physics as major. 2. Grow sufficient courage to deal with situations relating physics. 3. Enjoy the inner beauty of physics. 4. To discuss and explain any topic of physics to the H.S. or at least to the school level students in a convincing way. 5. Demonstrate some of the interesting facts with their innovation and creativity. 6. To handle the mechanical as well as electronic instruments with ease. 7. Build up enough confidence to continue physics to its highest level and hence make it a career with a broad view to enhance the entire humanity with remarkable achievements.
Programme Specific Outcomes	<ol style="list-style-type: none"> 1. To get acquainted with the various fields of physics and also with the great personalities who devoted their entire lives for it. 2. To visualize a few interesting principles of physics. 3. To set up some of the experiments included in the curriculum. 4. To deliver speech on a prepared topic using audio-visual aids.

Course Outcomes in B.Sc. Physics

Semester-I

Course (Paper code & Name)	Outcomes
	After completion of Semester I of the three-year degree course
PHYM 10100: Mechanics and Properties of Matter	<ol style="list-style-type: none"> 1. The students acquire knowledge about Newtonian Mechanics. 2. They get a clear idea regarding dynamics of rigid bodies. 3. They get well acquainted with Classical Mechanics.

Semester-II

Course (Paper code & Name)	Outcomes
	After completion of Semester II of the three-year degree course
PHYM 20100: Thermal Physics & wave and Oscillation	<ol style="list-style-type: none"> 1. The students get knowledge on nature of movement of gas molecules and its effect and the concept of probability. 2. They acquire knowledge on application of differential

	<p>calculus used to study the movement of Heat Energy and also on Radiation</p> <p>3. They get a good idea on natural and forced vibration. Moreover the idea to visualize the concept of phase of vibration and Lissajous Figures.</p>
--	---

Semester-III

Course (Paper code & Name)	Outcomes
	After completion of Semester I of the three-year degree course
PHYM 30100: Optics	<ol style="list-style-type: none"> 1. The students can have good idea regarding wave nature of light. 2. They can have understand the different optical phenomena exhibited by nature. 3. The can have a good experience of setting up and performing optical experiments.
PHYM 30200: Electricity and Magnetism	<ol style="list-style-type: none"> 1. Student gather concept on the nature of various fields. 2. Get good knowledge on thermoelectric effects and magnetism. 3. Acquires the skill of solving numerical problems related to electromagnetic induction and alternating currents.
PHYM 30300 Laboratory	Students can perform experiments of mechanics and optics.

Semester-IV

Course (Paper code & Name)	Outcomes
	After completion of Semester I of the three-year degree course
PHYM 40100: Mathematical Physics-I	<ol style="list-style-type: none"> 1. The students get conceptual clarity on gradient, divergent and curl of vector fields. 2. They acquire knowledge on transformation of matrices and tensor.
PHYM 40200: Quantum Mechanics	<ol style="list-style-type: none"> 1. Students get knowledge on wave-particle duality. 2. Get good knowledge on Schrödinger equation and also its applications on various problems. 3. They get knowledge on various operators and the expectation values of physical quantities.
PHYM 40300 Laboratory	Students can perform experiments of mechanics, wave and optics.

Semester-V

Course (Paper code & Name)	Outcomes After completion of Semester I of the three-year degree course
PHYM 50100: Mathematical Physics-II	<ol style="list-style-type: none"> 1. They can deal with differential equations and can use Forbenius method to obtain the series solutions. 2. They acquire knowledge on complex variables and Fourier Series.
PHYM 50200: Electrodynamics and Special Relativity	<ol style="list-style-type: none"> 1. They get well acquainted with Maxwell's equations and propagation of electromagnetic waves. 2. Get knowledge on relativity and the effects of relativistic motion.
PHYM 50300 Atomic and Molecular Physics	<ol style="list-style-type: none"> 1. They get historical background of quantum theory and also get knowledge on various couplings. 2. Get knowledge on Zeeman effect, Stark effect etc. 3. Students get knowledge on molecular spectra and also on Laser.
PHYM 50400 Electronics	<ol style="list-style-type: none"> 1. They get knowledge on semiconductor devices, amplifiers, oscillators, integrated circuits etc. 2. Acquire knowledge on digital electronics, various gates and Boolean algebra.
PHYM 50500 Laboratory	Besides doing various experiments of heat, electricity and Electronics they learn good laboratory practices and the safty measures.

Semester-VI

Course (Paper code & Name)	Outcomes After completion of Semester I of the three-year degree course
PHYM 60100: Statistical Mechanics	<ol style="list-style-type: none"> 1. Get knowledge on Classical Statistical Physics. 2. Know entropy and Partition Function. 3. They get knowledge on Statistical Physics and on application of quantum statistical mechanics.
PHYM 60200: Condensed Matter Physics	<ol style="list-style-type: none"> 1. Knowledge on crystal structure and properties of solids. 2. Get knowledge on semiconductor material, superconductivity, Meisner effect.
PHYM 60300 Nuclear Physics	<ol style="list-style-type: none"> 1. The students gather knowledge on binding energy, and different accelerators. 2. Get acquainted with various models of nucleus. 3. Learn fission and fusion process. 4. Get concept of cosmic rays.

PHYM 60430 (Optional) Laser & its Application	Get knowledge on laser and its various applications.
PHYM 60500 Laboratory	Learn to do the experiments related to electricity, digital electronics and semiconductor devices.

COURSE OUTCOME OF B.Sc. ZOOLOGY

Semester I

Course:

Non Chordate Diversity

Outcomes:

CO-1: Understand about the non chordate animals.

CO-2: Understand the general characters and classification upto orders.

CO-3: Understand the various internal systems take digestive, reproduction, incretions mission and nervous system.

Systematic and Evaluation

CO-1: Understand the systematic and classification

CO-2: Understand the modern species concept, women cloture.

CO-3: Understand the modern concept of taxonomy.

Semester II

Course: Biochemistry

Outcomes:

CO-1: Understand the law of thermo dynamics and their application in biochemistry

CO-2: Understand the structure and function of carbohydrate, amino acids, lipids & Proteins

CO-3: Understand the concept of metabolism

CO-4: Understand the concept of enzymes, vitamins & Co- enzymes

CO-5: Understand the concept of DN RNA and its various application functions & role

Semester III

Course: Chordate diversity

Outcomes

CO-1: Understand the concept of protozoates and classification upto orders.

CO-2: Understand the general character of chordates and classification upto class

CO-3: Understand the distinguishing character of petromyzontia , chondrichthyes & dipnoi

CO-4: Understanding the various mechanisms, adaptations and affinities of chordate diversity

Comparative anatomy

CO-1: Understanding the comparative anatomy of fish, reptiles, amphibian, reptiles, birds and mammals

Bioinstrumentation

CO-1: Understand the concept of chromatography

CO-2: Understand the basic principle & application of light, phase control & electron microscope

CO-3: Understand the principle of photometry

CO-4: Understand the principles and uses of chromatography , microtomy, ultramicrotomy, centrifugation & autoradiography

Biostatistics

CO-1: Course and utility of Statistics in bioscience

Semester IV

Course: Cell biology

Outcomes

CO-1: Understanding the distinguishing characters of cells

CO-2: To study and understand the whole cell organelles with their structure and function

CO-3: Understand the structure and function of chromosome

CO-4: Understand the cell cycle and know the importance of various cell in body organizations

CO-5: Understand the basic concept of cell signaling

Histology & Histochemistry

CO-1: To study and understand the histological methods

CO-2: Understand the classification and properties of dyes

CO-3: Histological structure of different organs

Developmental biology

CO-1: To study and understand the concept of gametogenesis, fertilization, cleavage and gastrulation and organogenesis

CO-2: Understand the extraembryonic membranes in birds and placentation in mammals

Semester V

Course: Genetics

Outcomes

CO-1: To study and understand Mendel's law of inheritance, concept of gene & allele. Gene fine structure

CO-2: Understand the concept of linkage & crossing over & gene mapping

Evolution

CO-1: Understand the evidence and theories of evolution

CO-2: Understand the concept of population, continental drift, evolution, endemism and adaptive radiation

Animal Physiology

CO-1: Understand the process of muscle contraction

CO-2: To study and understand the process of digestion, circulation, excretion and system.

Environmental biology

CO-1: To study and understand the concept of ecosystem

CO-2: To understand the different biogeochemical cycles, resources of N.E. India and strategy for sustainable utilization

CO-3: To study about the different environmental pollution

Wildlife

CO-1: To study and understand the IUCN Status, important endangered species of N.E, major national parks & biosphere reserves

Endocrinology

CO-1: Understand comparative anatomy of endocrine glands of fish, amphibians, birds & mammals

CO-2: Understand the concept of endocrine glands hormones and its various functions

CO-3: To study the neuro endocrine system

Semester VI

Course: Molecular biology

Outcomes

CO-1: Understand the genome organization in prokaryotes & eukaryotes, function of DNA & RNA

CO-2: Understand the concept of various process of DNA

CO-3: To study about recombination in prokaryotes

CO-4: to study and understand the concept of immune system

Biotechnology and bioinformatics

CO-1: To study and understand the history, scope and basics knowledge on biotechnological techniques

CO-2: To understand the fundamentals of bioinformatics

Economic zoology

CO-1: To study about the different insect pest and its management

CO-2: To study about the life histories of silk worm & Honey bee

CO-3: Understand the principle and practices in aquaculture

CO-4: Understand the piggery management 7 practices

Parasitology

CO-1: To study & understand the concept of parasitism with their life histories

CO-2: To understand the organization & pathogenicity of bacteria & viruses

CO-3: To understand the different vectors of human disease

Ethology

CO-1: To understand the concept of animal behaviors

CO-2: To study and understand the orientation & communication in animals.