GOALPARA COLLEGE
Programme Outcomes
(CBCS)

A Programme is constructed in such a way that, from each course in every semester a student gets a huge chunk of knowledge of the respective subject. After completion of a programme with honours course a students will have in depth knowledge of the course that is needed on the subject for them to proceed towards higher studies. At the same time the skill-based courses and practical papers are made in such a way that a student gets hands-on training on their respective fields. The regular courses are constructed in such a way that after completion of the course students become employable and an asset for the country. In bullets, skill and knowledge that will be acquired in general are as follows:

1. Understanding of broad subjective concepts and principles
2. Ability to identify and define problems and opportunities
3. Ability to identify a skill-based problem, isolate its key components, analyse and assess the salient issues, set appropriate criteria for decision making, and draw appropriate conclusions and implications for proposed solutions
4. Demonstrate use of appropriate techniques to effectively manage challenges of life
5. Capable of recognizing and resolving ethical issues
6. Effectively communicate issues, concepts, plans and decisions both in oral and written form using appropriate supportive technologies
7. Build a strong foundation for their higher studies.
8. Blend analytical, logical and managerial skills with the technical aspects to resolve real world issues.
9. Make students employable in various government and private jobs.

Dr. Subhash Barman
Principal
Goalpara College

Department of Arabic
Goalpara College
Programme Specific Outcome

Programme Name: B.A. in Arabic

Programme Specific Outcome:

- The programme provides compete knowledge of Arabic literature and language keeping in hold of the Arabic Culture.
- The Programme focuses in different traditions of Arabic literature in addition with details of the current and crosscurrents of social, economic and political changes from time to time.
- After completion of the programme, students will be able to enroll themselves in PG Arabic Language and Literature or in Oriental Studies too.
- The Programme ensures development of skills of Reading, Writing and Speaking Arabic language. In addition to the Arabic Literature, the programme is designed to cover other important aspects of Arabic as an educational subject to promote detailed knowledge of Arabic Culture among the students.

Dr. Mobarak Hussain
Head
Department of Arabic

Department of Arabic
Goalpara College
Course Specific Outcome (CBCS)

BA Arabic Regular

Semester I

COURSE: **DSC-1-A: CONTEMPORARY ARAB WORLD-I** COURSE CODE: **ARA-RC-1016**

After completion of the course

- Students will understand about the GCC and OPEC of Arab World.
- Students will understand about The Arab League and Indo-Arab relations.

Semester II

COURSE: **DSC-1-B: CONTEMPORARY ARAB WORLD-II**

COURSE CODE: **ARA-RC-2016**

After completion of the course

- Students will understand about the geography and economy of the kingdom of Saudi Arabia and United Arab.
- Students will understand about Contemporary political developments, Education and culture of the kingdom of Saudi Arabia and United Arab Emirates (UAE)

Semester III

COURSE: **DSC-1-C: CONTEMPORARY ARAB WORLD-III**

COURSE CODE: **ARA-RC-3016**

After completion of the course

- Students will understands Geography and Economy of Kuwait and Syrian Arab Republic
- Students will understand Political developments, Education and culture of Kuwait and Syrian Arab Republic

COURSE: **SEC-I SPOKEN ARABIC-I**

COURSE CODE: **ARA-SE-3014**

After completion of the course

- Students will understand Fundamentals of Arabic Language and Development of Reading and writing Skill.
- Students will understand Vocabulary Enrichment, Basic Grammar and Conversation Practices.

Semester IV

COURSE: **DSC-1-D: CONTEMPORARY ARAB WORLD-IV**

COURSE CODE: **ARA-RC-4016**

After completion of the course

- Students will understand Contemporary political developments, Geography and Economy of Iraq and State of Qatar.
- Student understands Education and culture of Iraq and State of Qatar

COURSE: **SEC-2: SPOKEN ARABIC-II** COURSE CODE: **ARA-SE-4014**

After completion of the course

- Students will understand Basic Arabic Grammar and Development of Reading and Writing Skill.
- Students will understand Vocabulary Enrichment**.**

Semester V

COURSE: **SEC-3: SPOKEN ARABIC-III** COURSE CODE: **ARA-SE-5014**

After completion of the course

- Students will understand Vocabulary Enrichment and Basic Grammar

COURSE: **DSE-1-A: ARABIC PROSE,** COURSE CODE: **ARA-SE-5014**

POETRY & HISTORY OF ARABIC LITERATURE

After completion of the course

- Students will understand about the Growth, development and characteristics of pre-Islamic Arabic prose and poetry.
- Students will understand about the Prominent figures of pre-Islamic Arabic prose and poetry

COURSE: **GE-1: POLITICAL HISTORY OF THE ARABS-I** COURSE CODE: **ARA-SE-5014**

After completion of the course

- Students will understand about the Early life of the prophet Mohammad (PBUH).
- Students will understands about the Administration under the Prophet

Semester VI

COURSE: **SEC-4: SPOKEN ARABIC-IV** COURSE CODE: **ARA-SE-6014**

After completion of the course

- Students will understand Basic Grammar.
- Students will understand Vocabulary Enrichment.

COURSE: **DSE-1-B: ARABIC PROSE, POETRY HISTORY OF ARABIC LITERATURE-II** COURSE CODE: **ARA-RE-6016 &**

After completion of the course

- Students will understand about the Development and Characteristics of Arabic prose and poetry during early Islamic period.
- Students will understand about the prominent figures of Arabic Prose and Poetry literature during early Islamic period.

COURSE: **GE-2: POLITICAL HISTORY OF THE ARABS-II** COURSE CODE: **ARA-RG-6016**

After completion of the course

- Student understands about the life and administrative system of Abu Bakar Siddique and Umar Farooq.

PROGRAMME OUTCOME

DEPARTMENT OF ASSAMESE

Programme Outcome:

- Students will learn about the history of Assamese Language and Literature will enrich their knowledge of the Assamese Language, Literature and Culture from the beginning.
- They will also learn the socio cultural and political knowledge of the period.
- They will gain knowledge on the life of famous poets and authors as well as their famous work.
- They will also know about research work by their field project.
- Student will be able to engage themselves in the teaching and other jobs like Reporter, Proofreader, News-reader etc.

DEPARTMENT OF ASSAMESE

Course Outcomes (CBCS) HONOURS

Semester I

Course: History of Assamese Literature – 1 **Course Code: ASM-HC-1016**

- They will know about History of Assamese Literature, Pre Sankar Era and Sankar Era

Course: History of Assamese Literature – 2 **Course Code: ASM-HC-1026**

- A Clear idea about Sarit Sahitya, History, Pre Orunodoi, and Orunodoi Era. Also about the writer of Orunodoi Literature

Semester II

Course: Linguistics **Course Code: ASM-HC-2016**

- They will know about Language, Linguistics and Branches of Linguistics, Phonology, Morphology, Morph and syntax.

Course: Literary Criticism **Course Code: ASM-HC-2026**

- They will know about the Assamese Literature and criticism

Semester III

Course: Assamese Literature **Course Code: ASM-HC-3016**

- They will know about Assamese story, poetry and short story

Course: Introduction of Assamese Poem **Course Code: ASM-HC-3026**

- They will learn about old and modern Assamese poetry.

Course: Assamese Culture **Course Code: ASM-HC-3036**

- The student will know about the Assamese cultural studies and various religion of Assam

Course: Skill Development **Course Code: ASM-SE-3014**

- They will learn about Translation form Assamese to English, English to Hindi and also learn about proof reading.

Semester IV

Course: Comparative Indian Literature **Course Code: ASM-HC-4016**

- The student will learn about the theory of comparative Indian Literature and Indian Literature

Course: Assimilation of Assamese Language **Course Code: ASM-HC-4026**

- They will know about the Assimilation of Assamese Language and also Aryan and non- Aryan Language

Course: Assamese Prose **Course Code: ASM-HC-4036**

- They will know about History of Assamese Prose

Course: Skill Development **Course Code: ASM-SE-4014**

- The student will learn how to write creative writings.

COURSE OUTCOME (CBCS) REGULAR

Semester I

Course: Axomiya Bhakhar Etihakh **Course Code: ASM-RC-1016**

- The student will learn about the Origin of Assamese Script and its evolution.

Semester II

Course: Axomiya Hahitya Etihakh **Course Code: ASM-RC-2016**

- Students will be introduced with the history of Assamese Literature.
- Students will be introduced with the characteristics and diversity of Assamese Literature till the Sankrottar Era.

Semester III

Course: Bhakha Bigyan Porichay **Course Code: ASM-RC-3016**

- Though this paper students can learn about the definition of dialect, regional and social dialects, characteristics of dialects and its classifications, uses of dialects in standard literature etc.

Semester IV

Course: Xahitya Xamalochana Course **Code: ASM-RC-4016**

- Though this paper students can learn the origin of Assamese language and its relation with non- Aryan and to days component of Assamese language.

SKILL ENHANCEMENT COURSE OUTCOME

(CBCS)

Semester III

Course: Byaboharik Axomia **Code: ASM-SE-3014**

- Students will be able to practically apply the assamese language in day to day life

Semester IV

Course: Srijanimulok Xahitya **Code: ASM-SE-4014**

DEPARTMENT OF ECONOMICS
PROGRAMME OUTCOMES

PROGRAMME: B.A. ECONOMICS

1. Knowledge and Understanding:

a. Theoretical Knowledge on Economic variables, issues and Challenges
b. Practical knowledge on how micro and macroeconomic concepts can be applied toanalyze real life situations
c. Application of mathematical tools to calculate economic variables and interpretingthe results.
d. Application of Statistics in interpreting Economic Phenomenon.
e. Knowledge on impact of Economic Development on Environment and urge forsustainable development.
f. Detailed knowledge on global environmental issues and how to mitigate environmental pollutions.
g. Knowledge on how to behave as a rational consumer.
h. Useful for students aiming towards careers in the government sector, policy analysis, business and journalism.

2. Intellectual Skills:

a. In-depth knowledge on various economic issues
b. Exploration of socio-economic issues related to human development, environment and sustainable development though observation, media and internet sources.
c. Capacity building for sample survey related to economic issues and environment.

3. .Practical Skills:

a. Study of economic problems like poverty, unemployment, standard of living etc.
b. Consumer survey, Population Survey, Data entry and interpretation, Cost-benefit analysis
c. Field study of the local area to know about the economic issues related to the inhabitants
d. Skill on Software's to entry and interprets data.

4. Transferable Skills:

a. Information technology for accumulation and sharing of data.
b. Dissemination of ideas in writing and interpreting, considering the economic aspects
c. Team spirit.
d. Access of E- resources.

5. Scientific Knowledge and problem analysis:

Application of principles of economics in studying and analysing socio-economic problems and phenomena related to the economy.

6. Usage of Modern tools:

a. Practical application of online teaching-learning platform like Zoom, Cisco Webex, Google Classroom etc.

b. Software like MS Excel, SPSS/PSPP

7. Ethics:

1. Promoting self interest and achieve happiness without interfering anyone's Interest.
2. Equal distribution of wealth and opportunity to check the destruction of social

cohesion.

3. Application of moral and ethical principles to mitigate environmental issues andmaintain sustainable development.

DEPARTMENT OF ECONOMICS

Course Outcomes (CBCS) HONOURS

Semester: I

B.A. Economics Honours

COURSE: **Introductory Microeconomics** COURSE CODE: **ECO-HC-1016**

- Knowledge on the basic principles of microeconomic theory. Emphasis on thinking like an economist
- Practical knowledge on how macroeconomic concepts can be applied to analyze real life situations.

COURSE: Mathematical Methods of Economics-I COURSE CODE: ECO-HC-1026

- Basic knowledge on transmit the body of basic mathematics in order to study the economic theory.
- Illustration of the method of applying Mathematical Techniques to economic theory in general.

Semester: II

COURSE**: Introductory Macroeconomics** COURSE CODE**: ECO-HC-2016**

- Basic knowledge on the Concepts of Macroeconomics.

- Basic knowledge on the preliminary concepts associated with the determination and measurement of aggregate macroeconomic variables like savings, investment, GDP, money, inflation, and the balance of payments.

COURSE: Mathematical Methods in Economics-II COURSE CODE: ECO-HC-2026

- Basic knowledge on transmit the body of basic mathematics in order to study the economic theory.
- Illustration of the method of applying Mathematical Techniques to economic theory in general.

Semester: III

COURSE**: Intermediate Microeconomics – I** COURSE CODE**: ECO-HC-3016**

- Basic knowledge on the behaviour of individual agents.
- Basic knowledge on application of mathematical tools to understand the basic concepts of microeconomics.

COURSE: Intermediate MacroeconomicsCOURSE CODE: ECO-HC-3026:

- Knowledge on the various alternative theories of output and employment determination in a closed economy in the short run as well as medium run.
- Basic knowledge on the role of policy in output and employment determination.
- Knowledge on various theoretical issues related to an open economy.

COURSE: Statistical Methods for Economics COURSE CODE: ECO-HC-3036

- Detailed Knowledge on the basic concepts and terminology that are fundamental to statistical analysis and inference.
- Knowledge on probability, probability distributions of discrete and continuous random variables, and joint distribution.
- Knowledge through detailed discussion on sampling techniques used to collect survey data.
- Basic knowledge on sampling distributions – a bridge between probability theory and statistical inference**.**

Semester: IV

COURSE **:Intermediate Microeconomics-II** COURSE CODE**:ECO-HC-4016**

- Knowledge on the general equilibrium and welfare, imperfect markets and topics under information economics**.**
- Emphasis on the use of mathematical tools and reasoning to make conceptual clarity.

COURSE: Intermediate Macroeconomics-II COURSE CODE: ECO-HC-4026

- Detailed knowledge on long run dynamic issues like growth and technical progress.
- Knowledge on the various aggregative concepts previously used to build micro-foundations.

COURSE: Introductory Econometrics COURSE CODE: ECO-HC-4036

- Basic knowledge on econometric concepts and techniques**.**
- Knowledge on the statistical concepts of hypothesis testing, estimation and diagnostic testing of simple and multiple regression models.
- Knowledge on the consequences of misspecification of regression models.

COURSE OUTCOME (CBCS) REGULAR

Semester: I

COURSE: Principles of Microeconomics-I COURSE CODE: ECO-RC1016

- Expose the students to the basic Principles of Microeconomic theory.
- Illustration of the theories with applications

Semester: II

COURSE**: Principles of Microeconomics-II** COURSE CODE**: ECO-RC-2016**

- Expose the students to the basic Principles of Microeconomic theory.
- Knowledge on the theory of markets and conditions of market failure

Semester: III

COURSE**: Principles of Macroeconomics-I** COURSE CODE**: ECO-RC-3016**

- Expose the students to the basic concept of macroeconomics.
- Knowledge on various macro economic variables like GDP, Consumption, Savings, Investment etc.
- Knowledge on various theories of determining GDP in the short run.

Semester: IV (Regular)

COURSE**: Principles of Macroeconomics-II** COURSE CODE**: ECO-RC-4016**

- Knowledge on various theories of determination of National Income
- Knowledge on the concept of Inflation, its relationship with unemployment and some basic concepts in an open economy.

SKILL ENHANCEMENT COURSE (SEC)

BA III Semester (CBCS)

COURSE: DATA COLLECTION AND PRESENTATION COURSE CODE: ECO-SE-3014

- Knowledge on use of data and presentation of data using computer software
- Knowledge on preparation of questionnaires and interview schedules
- Expose the students the methods to collect and present primary as well as secondary data

BA IV Semester(CBCS)

COURSE**: DATA ANALYSIS** COURSE CODE**: ECO-SE-4014**

- Knowledge on how data can be summarized and analyzed for drawing statistical inferences.
- Knowledge on important data sources
- Knowledge on statistical software like SPSS/PSPP to analyse data
- Knowledge on data entry in software like MS Excel, SPSS/PSPP
- Knowledge on statistical tools and their presentation through software.

PROGRAMME SPECIFIC OUTCOMES

GOALPARA COLLEGE

DEPARTMENT OF MATHEMATICS

PROGRAMME: B.SC. MATHEMATICS

PROGRAMME SPECIFIC OUTCOME

1. Knowledge and Understanding:

a. The students will get an introduction to the basic tools of calculus and geometric properties of different conic sections which are helpful in understanding their applications in planetary motion, design of telescope and to the real world problems.

b. The students will learn the basic tools of set theory, functions, induction principle, theory of equations, complex numbers, number theory, matrices and determinant to understand their connection with the real-world problems.

c. The students will develop a deep and rigorous understanding of real line and of defining terms to prove the results about convergence and divergence of sequences and series of real numbers. These concepts have wide range of applications in real life scenario.

d. The students will be introduced to the exciting world of differential equations, mathematical modeling and their applications

e. The students will learn about the fundamental theory of groups and their homomorphisms, Symmetric groups and group of symmetries, and Fermat's Little theorem as a consequence of the Lagrange's theorem on finite groups.

f. The students will be familiar with the basic tools of two dimensional coordinates systems, general conics, and three dimensional coordinate systems.

g. The students will be able to comprehend various computational techniques to find approximate value for possible root(s) of non-algebraic equations and to find the approximate solutions of system of linear equations and ordinary differential equations. Also, use of Computer Algebra System (CAS) by which the numerical problems can be solved both numerically and analytically, will enhance their problem solving skills.

h. The students will get an introduction to the fundamental theory of rings and their corresponding homomorphisms. Also they will be introduced to the basic concepts of ring of polynomials and irreducibility tests for polynomials over ring of integers.

i. The students will get an introduction to the fundamental theory of vector spaces. They will be emphasized on the application of techniques using the adjoint of a linear operator and their properties to least squares approximation and minimal solutions to systems of linear equations.

j. The students will get an introduction to the basic ideas of analysis for complex functions with visualization through relevant practicals. Emphasis will be given on Cauchy's theorems, series

expansions and calculation of residues.

k. The students will be able to solve partial differential equations and use them in solving some physical problems.

2. Development of intellectual faculties:

a. Mathematics is the foundation of all sciences. The course will promote logical and analytical thinking amongst students.

b. Students will develop the ability to think critically, logically and analytically and hence use mathematical reasoning in everyday life.

c. Pursuing a degree in mathematics will introduce the students to a number of interesting and useful ideas in preparations for a number of mathematics careers in education, research, government sector, business sector and industry.

d. The program covers the full range of mathematics. The course lays a structured foundation of Calculus, Real and Complex analysis, Algebra, Differential equations and Mathematical modeling, Number theory, Graph theory, Mechanics and C-programming.

e. An exceptionally broad range of topics covering Pure and Applied Mathematics:Linear Algebra, Metric spaces, Linear Programming and Applications cater to varied interests and ambitions.

f. Also, to carry out the hands-on sessions in Computer lab using various CAS software gives a deep conceptual understanding of the above tools to widen the horizon of students' self-experience.

3. Practical Skills:

a. Students will learn the use of softwares; Mathematica/MATLAB/Maxima/Maple etc. as a calculator, for plotting functions and animations.

b. Students will learn the use of CAS for various applications of matrices such as solving systems of equations and finding eigenvalues and eigenvectors.

c. Students will learn to analyze, test, and interpret technical arguments on the basis of geometry.

d. Students will understand and apply the programming concepts of C which is important to mathematical investigation and problem solving.

e. Students will learn to create and typeset a LaTeX document, typeset a mathematical document using LaTex.

f. Students will learn about pictures and graphics in LaTex., create beamer presentations and create web pages using HTML.

g. Students will learn various mathematical models such as Growth model (exponential case only), Decay model (exponential case only), Lake pollution model (with constant/seasonal flow and pollution concentration), Case of single cold pill and a course of cold pills, Limited growth of

population (with and without harvesting) and will able to solve these models numerically using CAS.

h. Students will know about methods to solve systems of linear equations, such as False position method, Fixed point iteration method, Newton's method, Secant method and LU decomposition using CAS.
i. Students will learn Interpolation techniques to compute the values for a tabulated function at points not in the table, Applications of numerical differentiation and integration to convert differential equations into difference equations for numerical solutions using CAS.
j. Students will learn basic ideas of analysis for complex functions with visualization through relevant practicals using CAS.
k. Students will learn and solve various Mathematical Modeling involving partial differential equations using CAS.

4. Communication and Other Skills:

a. Students are allowed to prepare a topic holistically and after that they are asked to present. This polishes their communication skills. In other words, communication skills are developed.
b. While performing the project work, students are encouraged to participate in group discussion with the supervisor, other faculty members and some of the students. This will develop the confidence and art of speaking/delivery on a public platform. Sometimes projects are carried out in groups. By that process, they develop a team spirit, sportsmanship etc.
c. The course exposes the students to various facets of computer programming and other relevant diagnostic techniques that may have important applications in developing future technology.

5. Prospects of employment:

a. After the successful completion of this course, a student becomes eligible to pursue higher studies such as MSc (Mathematics) in different reputed institutions across the country.
b. A student of BSc Mathematics can be absorbed as a Mathematics teacher in a school provided he/she fulfills other eligibility criteria.
c. A student of BSc Mathematics may get the opportunity to pursue a course on Master of Computer Science, Master of Technology etc.
d. A student of BSc Mathematics may get employment as a Statistician.
e. A student pursuing BSc in Mathematics may dream of getting placements as Assistant Professor in Universities/Institutions and colleges across the country and abroad.
f. Students may undertake various training after completion of BSc and may get a scope to

g. serve the country through civil services.

h. Students will get ample opportunity to build a career in reputed Govt. owned enterprises like SAIL, GAIL, OIL, ONGC, and IOCL after completion of BSc..

i. There are opportunities to get a placement in Central, Cooperative Banks as PO, Asst Branch Manager, and Client relationship officer after completion of BSc in Mathematics, which serves as eligibility criteria.

j. A student pursuing BSc in Mathematics may get employment opportunities in reputed coaching institutes across the country.

6. Ethics:

a. In the process of project preparation students will be made aware of IP tools such as copyright. They will learn about plagiarism issues and will practice genuine techniques in preparing projects and other reports related to academics. This will develop an independent feel and bring out creativity amongst students.

b. Students will understand the protocols of Laboratory work and learn discipline in performing their duties.

Kabindra Goswami

Head

Deptt.of Mathematics

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Department of Mathamatics
Goalpara College
Course Outcome (CBCS)

BSc Mathamatics Honours

Semester I

Course: Calculus (including practical) **Course Code: MAT-HC-1016**

After the completion of this course, students will be able to:

1. Learn first and second derivative tests for relative extremum and apply the knowledge in problems in business, economics and life sciences.
2. Sketch curves in a plane using its mathematical properties in different coordinate systems.
3. Compute area of surfaces of revolution and the volume of solids by integrating over cross-sectional areas.
4. Understand the calculus of vector functions and its use to develop the basic principles of planetary motion.

Couse: Algebra **Course Code: MAT-HC-1026**

After the completion of the course, students will be able to:

1. Employ De Moivre's theorem in a number of applications to solve numerical problems.
2. Learn about equivalent classes and cardinality of a set.
3. Use modular arithmetic and basic properties of congruences.
4. Recognize consistent and inconsistent systems of linear equations by the row echelon form of the augmented matrix.
5. Learn about the solution sets of linear systems using matrix method and Cramer's rule.

Couse: Calculus **Course Code: MAT-HG-1016/ MAT-RC-1016**

After the completion of the course, students will be able to

1. Understand continuity and differentiability in terms of limits.
2. Describe asymptotic behavior in terms of limits involving infinity.
3. Use derivatives to explore the behavior of a given function, locate and classify its extrema, and graph the function.
4. Understand the importance of the Mean value theorem.

SEMESTER II

Course: Real Analysis **Course code: MAT-HC-2016**

Upon successful completion of this course it is intended that a student will be able to:

1. Understand many properties of the real line *R*, including completeness and Archimedean properties.
2. Learn to define sequences in terms of functions from *N* to a subset of *R*.
3. Recognize bounded, convergent, divergent, Cauchy and monotonic sequences and to calculate their limit superior, limit inferior, and the limit of a bounded sequence.
4. Apply the ratio, root, alternating series and limit comparison tests for convergence and absolute convergence of an infinite series of real numbers.

Course: Differential Equations(including practical) Course Code: MAT-HC-2026

After the completion of the course, students will be able to:

1. Learn the basics of differential equations and mathematical modeling.
2. Formulate differential equations for various mathematical models.
3. Solve first order nonlinear differential equations and linear differential equations of higher order using various techniques.
4. Apply these techniques to solve and analyze various mathematical models.

Course: Algebra **Course Code: MAT-HG-2016/MAT-RC-2016**

Upon successful completion of this course it is intended that a student will be able to:

1. Learn how to solve the cubic and biquadratic equations, also learn about symmetric functions of the roots for cubic and biquadratic.
2. Employ De Moivre's theorem in a number of applications to solve numerical problems.
3. Recognize consistent and inconsistent systems of linear equations by the row echelon form of the augmented matrix, finding inverse of a matrix with the help of Cayley-Hamilton theorem.
4. Recognize the mathematical objects that are groups, and classify them as abelian, cyclic and permutation groups, rings etc.
5. Learn about the concept of linear independence of vectors over a field, and the dimension of a vector space.

Semester III

Course: Theory of Real Functions **Course Code: MAT-HC-3016**

After the completion of the course, students will be able to:

1. Have a rigorous understanding of the concept of limit of a function.
2. Learn about continuity and uniform continuity of functions defined on intervals.
3. Understand geometrical properties of continuous functions on closed and bounded intervals.
4. Learn extensively about the concept of differentiability using limits, leading to a better understanding for applications.
5. Know about applications of Mean value theorems and Taylor's theorem.

Course: Group Theory - I **Course Code: MAT-HC-3026**

After the completion of the course, students will be able to:

1. Recognize the mathematical objects that are groups, and classify them as abelian, cyclic and permutation groups, etc.
2. Link the fundamental concepts of groups and symmetrical figures.
3. Analyze the subgroups of cyclic groups and classify subgroups of cyclic groups.
4. Explain the significance of the notion of cosets, normal subgroups and factor groups.
5. Learn about Lagrange's theorem and Fermat's Little theorem.
6. Know about group homomorphisms and group isomorphisms.

Course: Analytical Geometry **Course Code: MAT-HC-3036**

After the completion of the course, students will be able to:

1. Learn conic sections and transform coordinate systems.
2. Learn polar equation of a conic, tangent, normal and properties.
3. Have a rigorous understanding of the concept of three dimensional coordinates.

Course: Differential Equations **Course Code: MAT-HG-3016/MAT-RC-3016**

After the completion of the course, students will be able to:

1. Learn the basics of differential equations and mathematical modeling.
2. Solve first order nonlinear differential equations and linear differential equations of higher order using various techniques.

Course: SKILL ENHANCEMENT COURSE:

Computer Algebra Systems and Related Software **Course Code: MAT-SE-3014**

This course will enable the students to:

1. Use of softwares; Mathematica/MATLAB/Maxima/Maple etc. as a calculator, for plotting functions and animations.
2. Use of CAS for various applications of matrices such as solving systems of equations and finding eigenvalues and eigenvectors.
3. Understand the use of the statistical software R as a calculator and learn to read and get data into R.
4. Learn the use of R in summary calculation, pictorial representation of data and exploring relationships between data.
5. Analyze, test, and interpret technical arguments on the basis of geometry.

Semester IV

Course: Multivariate Calculus **Course Code: MAT-HC-4016**

After the completion of the course, students will be able to:

1. Learn the conceptual variations when advancing in calculus from one variable to multivariable discussion.

2. Understand the maximization and minimization of multivariable functions subject to the given constraints.
3. Learn about inter-relationship amongst the line integral, double and triple integral formulations.
4. Familiarize with Green's, Stokes' and Gauss divergence theorems.

Course: Numerical Methods (including practical) **Course Code: MAT-HC-4026**

Upon successful completion of this course it is intended that a student will be able to:

1. Learn some numerical methods to find the zeros of nonlinear functions of a single variable and solution of a system of linear equations, up to a certain given level of precision.
2. Know about methods to solve systems of linear equations, such as False position method, Fixed point iteration method, Newton's method, Secant method and LU decomposition.
3. Interpolation techniques to compute the values for a tabulated function at points not in the table.
4. Applications of numerical differentiation and integration to convert differential equations into difference equations for numerical solutions.

Course: Ring Theory **Course Code: MAT-HC-4036**

After the completion of the course, students will be able to:

1. Appreciate the significance of unique factorization in rings and integral domains.
2. Learn about the fundamental concept of rings, integral domains and fields.
3. Know about ring homomorphism and isomorphism theorems of rings.
4. Learn about the polynomial rings over commutative rings, integral domains, Euclidean domains, and UFD.

Course: SKILL ENHANCEMENT COURSE: LaTeX and HTML **Course Code: MAT-SE-4024**

After the completion of the course, students will be able to learn:

1. Create and typeset a LaTeX document.
2. Typeset a mathematical document using LaTex.
3. Learn about pictures and graphics in LaTex.
4. Create beamer presentations.

5. Create a web page using HTML.

Course: Real Analysis **Course Code: MAT-HG-4016/ MAT-RC-4016**

Upon successful completion of this course it is intended that a student will be able to:

1. Understand many properties of the real line R, including completeness and Archimedean properties.
2. Learn to define sequences in terms of functions from R to a subset of R.
3. Recognize bounded, convergent, divergent, Cauchy and monotonic sequences and to calculate their limit superior, limit inferior, and the limit of a bounded sequence.
4. Apply the ratio, root, alternating series and limit comparison tests for convergence and absolute convergence of an infinite series of real numbers.

Semester V

Course: Riemann Integration and Metric spaces **Course Code: MAT-HC-5016**

After the completion of the course, students will be able to:

1. Learn about some of the classes and properties of Riemann integrable functions, and the applications of the Fundamental theorems of integration.
2. Know about improper integrals including, beta and gamma functions.
3. Learn various natural and abstract formulations of distance on the sets of usual or unusual entities. Become aware one such formulations leading to metric spaces.
4. Analyze how a theory advances from a particular frame to a general frame.
5. Appreciate the mathematical understanding of various geometrical concepts, viz. Balls or connected sets etc. in an abstract setting.
6. Know about Banach fixed point theorem, whose far-reaching consequences have resulted into an independent branch of study in analysis, known as fixed point theory.
7. Learn about the two important topological properties, namely connectedness and compactness of metric spaces.

Course: Linear Algebra **Subject Code: MAT-HC-5026**

After the completion of the course, students will be able to:

1. Learn about the concept of linear independence of vectors over a field, and the dimension of a vector space.
2. Basic concepts of linear transformations, dimension theorem, matrix representation of a linear transformation, and the change of coordinate matrix.
3. Compute the characteristic polynomial, eigenvalues, eigenvectors, and eigenspaces, as well as the geometric and the algebraic multiplicities of an eigenvalue and apply the basic diagonalization result.
4. Compute inner products and determine orthogonality on vector spaces, including Gram-Schmidt orthogonalization to obtain orthonormal basis.
5. Find the adjoint, normal, unitary and orthogonal operators.

Course: Number Theory **Course Code: MAT-HE-5016**

After the completion of the course, students will be able to:

1. Learn about some fascinating discoveries related to the properties of prime numbers, and some of the open problems in number theory, viz., Goldbach conjecture etc.
2. Know about number theoretic functions and modular arithmetic.
3. Solve linear, quadratic and system of linear congruence equations.

Course: Programming in C (including practical) Course Code: MAT-HE-5066

After completion of this course, students will be able to:

1. Understand and apply the programming concepts of C which is important to mathematical investigation and problem solving.
2. Learn about structured data-types in C and learn about applications in factorization of an integer and understanding Cartesian geometry and Pythagorean triples.
3. Use of containers and templates in various applications in algebra.
4. Use mathematical libraries for computational objectives.
5. Represent the outputs of programs visually in terms of well formatted text and plots.

Course: Number Theory **Course Code:MAT-RE-5016**

After completion of this course, students will be able to:

1. Learn about some fascinating discoveries related to the properties of prime numbers, and some of the open problems in number theory, viz., Goldbach conjecture etc.
2. Know about number theoretic functions and modular arithmetic.
3. Solve linear, quadratic and system of linear congruence equations.

Semester VI

Subject: Complex Analysis (including practical) **Subject Code: MAT-HC-6016**

Upon completion of the course, students will be able to:

1. Learn the significance of differentiability of complex functions leading to the understanding of Cauchy−Riemann equations.
2. Learn some elementary functions and can evaluate the contour integrals.
3. Understand the role of Cauchy−Goursat theorem and the Cauchy integral formula.
4. Expand some simple functions as their Taylor and Laurent series, classifythe nature of singularities, find residues and apply Cauchy Residue theorem to evaluate integrals.

Subject: Partial Differential Equations (including practical) Subject Code:MAT-HC-6026

Upon Completion of the course students will be able to-

1. Formulate, classify and transform first order PDEs into canonical form.
2. Learn about methods of characteristics and separation of variables to solve first order PDEs.
3. Classify and solve second order linear PDEs.
4. Learn about Cauchy problem for second order PDE and homogeneous as well as nonhomogeneous wave equations.
5. Apply the method of separation of variables for solving second order PDEs.

Course: Hydromechanics Course Code: MAT-HE-6046

Upon completion of this course, students will be able to:

1. Know about Pressure equation, rotating fluids.
2. Learn about Fluid pressure on plane surfaces, resultant pressure on curved surfaces, Gas law, mixture of gases.
3. Learn about the Eulerian and Lagrangian method.
4. Learn about equation of continuity, examples, acceleration of a fluid at a point.

Course: Group Theory II Course Code: MAT-HE-6066

Upon completion of this course, students will be able to:

1. Learn about automorphisms for constructing new groups from the given group.
2. Learn about the fact that external direct product applies to data security and electric circuits.
3. Understand fundamental theorem of finite abelian groups.
4. Be familiar with group actions and conjugacy in S_n.
5. Understand Sylow theorems and their applications in checking non-simplicity.

Course: Numerical Analysis Course Code: MAT-RE-6016

Upon completion of this course, students will be able to:

1. Learn some numerical methods to find the zeroes of nonlinear functions of a single variable and solution of a system of linear equations, up to a certain given level of precision.

2. Know about iterative and non-iterative methods to solve system of linear equations.

3. Know interpolation techniques to compute the values for a tabulated function at points not in the table.

4. Integrate a definite integral that cannot be done analytically.

5. Find numerical differentiation of functional values.

6. Solve differential equations that cannot be solved by analytical methods.

Department of Education
Goalpara College
Programme Outcome

Programme Name: **B.A. in Education**

Knowledge and Outcome:

- To realize that the pursuit of knowledge is a lifelong process and one can achieve thesuccess only with untiring efforts and positive attitude.
- To develop various communication skills such as reading, listening, speaking, etc.,which will be helpful in expressing ideas and views clearly and effectively?
- To realize the importance of literature in terms of aesthetic, mental, moral, intellectualdevelopment of an individual and accordingly of thesociety.
- To understand how issues in the social science get influenced by the literature andhow the literature can provide solutions to the social issues.
- To gain the analytical ability to analyze the literature and social issues to appreciatethe strength and to suggest the improvements for better results.
- To emerge as a multifaceted personality who is self-dependent; earning his own breadand butter and also creating opportunities to do so.
- To imbibe ethical, moral and social values in personal and social life leading to highlycultured and civilized personality.
- To develop flair by participating in various social and cultural activities voluntarily, inorderto spread knowledge, creating awareness about the social evils, blind faith, etc.

- It attempts to approach new areas of learning, develop competencies in the students thereby opening various avenues for self discovery, academic understanding and employment.
- To realize the importance of literature in terms of aesthetic, mental, moral, intellectual development of an individual and accordingly of thesociety.

Course Specific Outcomes (CBCS)
B.A. Education Honours

Semester I

COURSE**: Principles of Education** COURSE CODE**: Edu-HC-1016**

After completion of the course students will gain

- Important concepts of Education, curriculum,democracy, discipline and freedom.
- To familiarize students with democratic idea ofmodern education.
- To help the learners to acquire knowledge about the concept of emotional andnational integration and international understanding.

COURSE: **Psychological Foundation of Education** COURSE CODE: **Edu-HC-1026**

After completion of the course students will understand

- The relationship between education and psychologyand explain the need of educational psychology in teaching learning process.
- About nature and theories of learning, role of motivation, theories of personality, intelligence and adjustment mechanism.

Semester II

COURSE: **Philosophical and Sociological Foundations of Education** COURSE CODE: **Edu-HC-2016**

After completion of the course students will understand

- The meaning of Education
- The meaning of Philosophy

- The difference between Indian and western Philosophy
- The nature and meaning of Philosophy of Education

COURSE: **Development of Education in India- 1** COURSE CODE: **Edu-HC-2026**

After completion of the course students will understand

- The pattern of changes in the education system.
- Characteristics of different education system in different time period

Semester III

COURSE: **Development of Education** COURSE CODE: **Edu-HC-3016**

After completion of the course students will understand

- The educational situation during the time of independence
- The educational importance of different educational commissions and committees during post independence period.
- The recent Educational Development in India.

COURSE: **Educational technology and teaching methods** COURSE CODE: **Edu-HC-3026**

After completion of the course students will gain

- Awareness about the objective of educational technology in teaching learning process and various methods and devices used in teaching.
- Knowledge about innovations in the field of education through technologyand make the students understand the strategies of effective teaching as a profession.

COURSE: **Value and Peace education** COURSE CODE: **Edu-HC-3036**

After completion of the course students will understand

- The meaning and importance of peace education and its relevance in human life as well as national and international understanding.
- About the role of educational institutions in building a value basedsociety.

COURSE: **Public Speaking Skill** COURSE CODE: **EDU-SEC-3014**

After completion of the course

- Students will able to acquire public speaking skill.

Semester IV

COURSE: **Great Educational Thinkers** COURSE CODE: **Edu-HC-4016**

After completion of the course

- The students with get acquainted with the philosophical thoughts of different Indian and Western Educational thinkers along with their contribution to present day education thoughts

COURSE: **Educational Statistics & Practical** COURSE CODE: **Edu-HC-4026**

After completion of the course

- It will enable the students to understand the basic concept of Statistics including different statistical procedures used in educational field.

COURSE: **Emerging Issues in Education** COURSE CODE: **Edu-HC-4036**

After completion of the course

- Students will come across the different challenges in the field of education and its promotion

B.A. Education (Generic Elective Course)

CBCS

Semester I

COURSE: **Foundations of Education** COURSE CODE: **Edu-HG/RC-1016**

After completion of the course

- Students will be acquainted with the principles of education
- Students will gain knowledge about different various Forms and Aims of Education

- Students will understand the concept and importance of Discipline and Freedom
- Students will acquire knowledge about the concept of Emotional and National Integration and International Understanding.

Semester II

COURSE: **Psychology of Adolescents** COURSE CODE: **Edu-HG/RC-2016**

After completion of the course

- Students will learn about different methods of approach and teaching the adolescents
- Students will know about the challenges and their solutions.

Semester III

COURSE: **Guidance And Councelling** COURSE CODE: **Edu HG/RC-3016**

After completion of the course

- Students will gain knowledge about educational and vocational guidance and counselling
- Students will also know about their different functions and organizations

Semester IV

COURSE: **History of Education In India** COURSE CODE: **Edu HG/RC-4016**

After completion of the course

- Students will learn about the past educational systems.
- They will be able to clearly draw the difference between the past and the present educational system.

DEPARTMENT OF ENGLISH

GOALPARA COLLEGE

PROGRAMME OUTCOMES

PROGRAMME: B.A. ENGLISH

The BA English syllabus is designed to prepare students to understand and use the English language effectively, build vocabulary and introduce them to current ideas and issues as represented in some of the best examples of English writing. This is true of the General, the Alternative, the Elective and the Major Courses. Attention has been paid to emerging 'voices,' that is, voices originating in locations other than the West. Indian writing continues to receive the emphasis and importance it deserves, and this syllabus may see the consolidation of a vision predicated on promoting Indian culture – obviously through its literary manifestations. This is the case in all genres of writing: novel, drama, poetry, non-fictional prose. The BA syllabus is a preparatory step to higher studies in English and related disciplines, and therefore the students are exposed to Theory, the kind that will help to open up their intellectual horizons and give them glimpses of the rigor that is now increasingly demanded in English studies which is moving away from de-contextualized studies of a few 'great' isolated texts. Such theory is incorporated particularly in the compulsory papers on Fiction and Drama, two papers on Criticism and Theory and in the optional paper on women's literature. On the whole a balance has been sought to be sustained between canonical works and newer kinds of writing. Most of the radical changes have been made in the Major course, but the papers on General English, Alternative English and Elective English have also been adequately revised and every effort has been made to make them interesting for students who do not wish to or need not specialize in English literature. Some of the best critical books in a particular area have been chosen to supplement class-room teaching and these are included in the section Recommended Reading in each paper, and it is indeed strongly recommended that students try to get hold of these books and read them (Many of these books are published by Indian publishers now, and should therefore be accessible). On the whole it is hoped that this syllabus will encourage and equip the students to take the next logical step in their career after getting their BA degrees, that is, enroll in various MA programmes if they are majoring in English, or pursue higher studies anyway, if they are not.

DEPARTMENT OF ENGLISH

GOALPARA COLLEGE

Course Outcomes (CBCS)

B.A. ENGLISH Honours

Semester I

COURSE: Indian Classical Literature COURSE CODE: ENG-HC-1016

This paper introduces students to some selected classical texts of Indian Literature in translation. This paper introduces students to a selection of Classical Literatures of India in English translation. Given that Indian Classical Literature offers a rich and diverse canvas that spans across genres like drama, poetry, the epic narrative as well as short fictional fables, to name a few. This paper will encourage students to know more about Indian culture.

COURSE: European Classical Literature COURSE CODE: ENG-HC-1026

This paper introduces students to a selection of Classical Literatures of Europe in English translation. While the Aristotelian focus on the examination of the essentials of poetry extended to incorporate discussions on epic and drama, subsequent writers such as Horace drew attention to the purposefulness of the creative exercise. In the theatre the widely divergent compositions by Sophocles and Plautus respectively show the consolidation of a rich cultural discourse. It is this enriching literary tradition that this paper will familiarize with through the study of representative texts belonging to the Classical Period.

Semester: II

COURSE**: Indian Writing in English** COURSE CODE**: ENG-HC-2016**

This paper develops familiarity with the issues of politics of language and gender, nationalism and modernity pertaining to pre and post-Independence India that have been responsible for the emergence of Indian English literature. It helps to understand the place of English Writing in India in the larger field of English Literature. It enables to learn to discuss critically the use of literary forms of the novel, poetry and drama by Indian English writers in distinctive ways against Indian historical and cultural context

COURSE: **British Poetry and Drama** COURSE CODE: **ENG-HC-2026**

This paper will familiarize the students with the two major forms in British literature from the 14th to the 17th centuries – poetry and drama, apart from acquainting them with the contexts that generated such literatures. It will also enable the students to understand the larger contexts of the Renaissance, the nature of the Elizabethan Age and its predilections for certain kinds of literary activities, and the implications of the emergence of new trends. It will also help the students to understand these seminal issues and preoccupations of the writers and their ages as reflected in these texts.

Semester III

COURSE: History of English Literature and Forms COURSE CODE: ENG-HC-3016

This paper introduces students to the History of English Literature and the major literary forms. It adopts a chronological approach to the study of poetry, drama, fiction and non-fictional prose, showing the development of each form as it moves through the various periods of English literature and its expansion into global English writing. Students can acquire a sense of the historical development of each literary form and gain understanding of the contexts in which literary forms and individual texts emerge. They can also learn to analyze texts as representative of broad generic explorations.

COURSE: **American Literature** COURSE CODE: **ENG-HC-3026**

This paper seeks to acquaint the students with the main currents of American literature in its social and cultural contexts. The texts incorporated in the paper are a historical reflection of the growth of American society and of the way the literary imagination has grappled with such growth and change. A study of the paper, hence, should lead to an acquaintance with the American society in its evolutionary stages from the beginnings of modernism to the present as well as with exciting generic innovations and developments that have tried to keep pace with social changes.

COURSE: **British Poetry and Drama:17th and 18th Centuries** COURSE CODE: **ENG-HC-3036**

This paper aims to familiarize the students with British literature in the 17th and 18th centuries, a time-period which sees the emergence and establishment of greatly diverse kinds of writings. The selected texts may encourage the students to look at the economic, political and social changes in (primarily) Britain during this period, such as the shifts from the Puritan Age to the Restoration and Neoclassical periods. The paper also seeks to familiarize the students with the larger contexts that generated such literatures as well as the possible impacts of the literature on society. The significance of the scientific revolution during this period may also be studied in relation to the literary productions.

Skill Enhancement Course

COURSE: Creative Writing **COURSE CODE:** ENG-SE-3014

The students in this course will focus on three creative genres, fiction, non-fiction and poetry. The emphasis will be to build proficiency in readings and writings. The course encourages active class participation and lots of writings. One of the basic objectives of the course is to allow students to explore ideas, feelings, and experiences and effectively communicate these stimulus using the written word. Each lecture will be tied to reading of texts, techniques, narratology and rhetorical positions. The set of readings will be given during the course and may vary each semester, whenever the course is on offer.

Semester IV

COURSE: British Literature: The 18th Century **COURSE CODE: ENG-HC-4016**

This paper aims to familiarize the students with British literature in the 18th century. A very interesting age in which reason and rationality dominated, this age saw the publication of some of the best novels and works of non-fictional prose and poetry in the English language. Though it was not predominantly an age of drama yet one cannot but pay attention to the few plays of the century. Although the texts in the course are mostly by men it must be noted that quite a number of women writers were also part of the literary scene. The texts in the course are representative of the age and to some extent representative of the forms as well. The selected texts hope to give the students an overview of the age and the writings that the age produced.

COURSE: British Romantic Literature **COURSE CODE: ENG-HC-4026**

The nineteenth century begins with the triumph of the Romantic imagination, expressing itself most memorably in the poetry of Blake, Burns, Wordsworth, Coleridge, Shelley, and Keats. The poetry of the age fashions itself partly in revolt to the spirit of the previous age, with very different ideas about the relationship between humans and nature and the role of the poet taking hold. This paper includes selections from works of major Romantic poets which address these issues, enabling students to appreciate the essence of the Romantic vision. In addition they will read that remarkable oddity, Frankenstein, a novel that also illuminates Romanticism from another angle.

COURSE: British Literature: The 19th Century **COURSE CODE: NG-HC-4036**

The texts chosen will expose the students to the ground-breaking efforts of the poets as well to the works of fiction writers who manage to consolidate and refine upon the achievements of the novelists of the previous era. Austen to Rossetti represents a remarkable literary development and range of works, addressing a very diverse array of social preoccupations.

Skill Enhancement Course

COURSE: Translation: Principles and Practice **COURSE CODE: ENG-SE-4014**

This course is designed to give students basic skills in translation. It introduces students to the field of translation studies and gives them training in practical translation.

The papers titled English I, English II, Alternative English I, and Alternative English II will be common for B.A. and B.Com. under CBCS.

Semester I

COURSE: English I **COURSE CODE: ENG-CC-1016**

The aim of this course (English I and II) is to provide the student an opportunity to read and respond to representations of issues in contemporary life and culture in the English language. The selection of texts is aimed to present themes and topics that are stimulating, insightful and informative.

COURSE: AECC: English Communication Skills

This course is designed to equip students with the basic communication skills in English language. The selection of texts aims to enrich the students' vocabulary, grammar and reading skills.

Semester II

COURSE: English II **COURSE CODE: ENG-CC-2016**

The aim of this course is to provide the student an opportunity to read and respond to representations of issues in contemporary life and culture in the English language. The selection of texts is aimed to present themes and topics that are stimulating, insightful and informative.

COURSE: AECC: English Communication Skills

This course is designed to equip students with the basic communication skills in English language. The selection of texts aims to enrich the students' vocabulary, grammar and reading skills.

Semester III

COURSE: Alternative English I **COURSE CODE: ALT-CC-3016**

This paper would seek to acquaint students with the major genres of English literature through texts which are landmarks of each genre. The texts have been carefully chosen to effectively represent the distinctive qualities of a particular genre. Moreover, students are encouraged to read the prescribed texts in their social and cultural contexts.

Semester IV

COURSE: Alternative English II **COURSE CODE: ALT-CC-4016**

The course has been designed to familiarize students with different forms of literature, texts and their contexts. The select texts would enable them to understand literary representations and a writer's engagement with the social, cultural and political milieu.

Ms. Loni Barua
Head
Department of English

PROGRAMME OUTCOMES

GOALPARA COLLEGE

DEPARTMENT OF HISTORY

PROGRAMME: B.A HISTORY

Prospect of the Course:

A. The students of History Honours have the privilege of undertaking the vast knowledge of past society, political institutions, historical concepts and ideas, Cultural, religious and economic, art and architectural status of states ,state's structure and functions, laws of the land, political philosophies, environmental and health issues etc..

B. The students are properly informed about the course and its structure at the time of their admissions.

C. The basic idea behind the program is to fully equip the students for their future endeavors with the prospect of fulfilling their ambitions in various services.

D. Students have the opportunity of acquiring vast knowledge on history of India, history of Assam and history of the world as well as history of ancient world civilizations.

E. Again, students also have the opportunity of learning organizational skills through the course.

F. Students acquire the knowledge of societal behavior; understand present day problems national and international.

G. They also gather the knowledge of Youth and their role towards nation building.

H. Students can always go for various programs in future with this course.

I. Civil services, academics, government jobs, human resources, politics, self employments, etc are some of the most common choices of career for the students.

J. They can also pursue research work in various topics through the course in their higher studies.

Head of the Department

Department of History

Course Outcome CBCS (Honours)

B.A. in History

Semester I

Course: HISTORY OF INDIA-1 **Course Code: HIS-HC-1016**

After the completion of the course-

1. The students will be able to explore and effectively use historical tools in reconstructing the remote past of ancient Indian pre and proto history.
2. The course will also train the students to analyze the various stages of evolution of human cultures and the belief systems in the proto- history period.

Course: Social formations and cultural Patterns of the ancient world **Course Code: HIS-HC-1026**

After the completion of the course, Students will be able to

1. Explain the processes and stages of the evolution of the variety of cultural pattern throughout antiquarian periods in History.
2. They will be able to relate the connections between the various Bronze Age civilizations in the ancient world as well as development of slave and polis societies in ancient Greece.

Course: History of India from Earliest Times up to c. 1206 **Course Code: HIS-RC-1016/HIS-GE-1016**

After the completion of the course, Students will be able to

1. Students will be able to explain the emergence of state system in North India, development of imperial state structure and state formation in South India in the early period.
2. They will be able to understand the changes and transformations in polity, economy and society in early India and the linkages developed through contacts with the outside world.

Semester II

Course: HISTORY OF INDIA-II **Course code: HIS-HC-2016**

Upon successful completion of this course it is intended that a student will be able to:

1. Explain the economic and socio-cultural connections.
2. Transitions and stratifications during the ruling houses.
3. Empires and the politico-administrative nuances of early Indian History from 300 BCE to 300 CE.

Course: Social Formations and Cultural Patterns of the Medieval World **Course Code: HIS-HC-2026**

After the completion of the course, Students will be able to:

1. Analyze and explain the historical socio-political
2. Administrative and economic patterns of the medieval world.
3. They will be able to describe the emergence, growth and decline of various politico-administrative and economic patterns and the resultant changes therein.

Course: History of India from c.1206 to 1757 **Course code: HIS-RC-2016/HIS-GE-2016**

Upon successful completion of this course it is intended that a student will be able to:

1. Analyze the political and social developments in India during 1206-1757.
2. Students will be able to explain the formation of different States during this period.
3. Their administrative apparatuses, and the society, economy and culture of India in the 13th to mid-18th century period.

Semester III

Course: History of India –III (c.750-1206) Course Code: HIS-HC-3016

After the completion of the course, Students will be able to

1. Enable the students to relate and explain the developments in India in its political and economic fields and its relation to the social and cultural patterns therein in the historical time period between c.700 to 1206.
2. They will also be able to analyze India's interaction with another wave of foreign influence and the changes brought in its wake in the period.

Course: Rise of the Modern West-I Course Code: HIS-HC-3026

After the completion of the course, Students will be able to

1. Explain the major trends and developments in the Western world between the 14th to the 16th century CE.
2. They will be able to explore and analyse the significant historical shifts and events and the resultant effects on the civilizations of Europe in the period.

Course: History of India IV (c.1206-1550) Course Code: HIS-HC-3036

After the completion of the course, Students will be able to

1. Explain the political and administrative history of medieval period of India from 1206 to 1550 AD.
2. They will also be able to analyse the sources of history, regional variations, social, cultural and economic set up of the period.

Course: Historical Tourism in Northeast India Course Code: HIS-SE-3024

After the completion of the course, Students will be able to

1. Explain Tourism in North East India with special reference to the historical monuments, cultural and ecological elements and places of the north east India country as tourist and heritage sites of the nation.
2. They will be able to relate to the growing vocation of tourism as an industry and the applicability of historical knowledge for its growth.
3. Students shall carry out a small project (submission not less than 2000 words) based on survey of an area or monument. The project should try to unearth the tourism potential of the surveyed area or monument. The project may also be on an existing tourist site. No sessional examination is required

for this paper.

Course: History of India (c.1757-1947) Course Code: HIS-HG-3016/HIS-RC-3016

After the completion of the course, Students will be able to

1. Understand the major factors that led to the establishment and consolidation of British rule in India.
2. They will also be able to identify the process of growth of resistance against British colonial rule and the eventual growth of Indian nationalist movement, which ultimately led to the end of the British rule in the country.

Semester IV

Course: Rise of the Modern West II Course Code: HIS-HC-4016

After the completion of the course, Students will be able to

1. Explain the political and intellectual currents in Europe in the Modern Age.
2. They will also be able to relate the circumstances and causal factors of the intellectual and revolutionary currents of both Europe and America at the beginning of the Modern age.

Course: History of India V(c.1550-1605) Course Code: HIS-HC-4026

Upon successful completion of this course it is intended that a student will be able to:

1. The students will be able to analyse the circumstances and historical shifts and foundations of a variety of administrative and political setup in India between c.1550-1605.
2. They will also be able to describe the inter relationships between the economy, culture and religious practices of the period.

Course: History of India -VI (C.1605-1750) Course Code: HIS-HC-4036

After the completion of the course, Students will be able to

1. Explain and reconstruct the linkages of the history of India under the Mughal Rule.

2. As a whole, this course will enable them to relate to the socio-economic and religious orientation of the people of medieval period in India.

Course: Oral Culture and Oral History **Course Code: HIS-SE-4014**

After the completion of the course, Students will be able to

1. Explain complex interrelationships of structures or events in the context of broader social and cultural framework of societies through 'public memory' and use oral history to preserve oral culture and local history.
2. The students will be able to espouse the relevance to the northeastern region of India with its diverse culture and ethnic communities whose history is largely oral.
3. The students will be able to use 'Public memory' as a tool and a source not only to write public history but also to explore new knowledge in the humanities , social sciences and even in disciplines like architecture, communication studies, gender studies, English, history, philosophy, political science, religion, and sociology.
4. In-semester assessment: Students shall carry out a small project (submission not less than 2000 words) using the Oral History method. It may be based on interviews of persons having information of past event or phenomena. No sessional examination is required for this course.

Course: Social and Economic History of Assam **Course Code: HIS-HG/HIS-RC--4016**

After the completion of the course, Students will be able to

1. Students will be able to analyse and explain the socio-economic history of Assam.
2. The development of caste system, religious beliefs, agriculture and land system, the social organization, trade and commerce, various agricultural regulations, plantation economy.
3. Development of modern industries, transport system, education, the emergence of middle class, development of literature and press, and growth of public associations

Mr. Yashwant Ray

Head

Departmen of History

Department of Philosophy
Goalpara College
PROGRAMME OUTCOME

Programme: B.A. in Philosophy

Programme Specific Outcome

Knowledge and Outcome:

- After completion of B.A Philosophy honours course, the students will be able to understand and discuss major philosophical problems in the Indian as well as Western tradition. They also will be able to assess arguments and philosophical perspectives using critical reasoning and can also express complex thoughts logically & coherently.

- After completion of the above course, the Philosophy Honours students will be able to demonstrate the ability to use the specific tools of critical thinking and logic in order to answer the following questions:

i. What is the difference between truth & validity?
ii. How does philosophical inquiry & argument differ from scientific investigation of mathematical proofs or empirical evidence?
They can also identify premises and conclusions in both formal as well as informal proofs and demonstrate an awareness of limits of deductive forms as well as linguistic ambiguities. They can argue more cogently and write more effectively & efficiently.

- After completion of B.A Philosophy honours course, the students will be able to demonstrate understanding of major ethical theories and problems in the Western as well as Indian traditions. They also will be able to apply knowledge of ethical perspectives, theories & critical reasoning in practical life.
- By studying classical texts & contemporary problems, B.A Philosophy honours students learn how to construct powerful arguments while pondering over some of the deepest questions in human life:

i. What makes for a meaningful life?
ii. Do humans have free will?
iii. What is the nature of consciousness and can it be explained?
iv. Is the existence of a benevolent and all-powerful God compatible with the existence of natural & human evil?

- Students in the B.A Philosophy honours course will be able to learn how to explore answers to these fundamental questions by debating and defending complex ideas & arguments & express their beliefs with clarity & precision. They will also develop sensitivity to the assumptions that underlie our factual & evaluative judgements and become careful and critical readers, writers, listeners & thinkers. They can also live a thoughtful & productive life.

Dr. Hemanto Kalita
Head
Department of Philosophy

DEPARTMENT OF PHILOSOPHY

GOALPARA COLLEGE

Course Outcomes (CBCS)

B.A. Philosophy Honours

Semester I

COURSE**: Indian Philosophy 1** COURSE CODE**: PHI-HC-1016**

After completion of the course students will gain

- Ability to search for the truth through thinking and speculation, about life and reality

COURSE: Logic COURSE CODE: PHI-HC-1026

After completion of the course students will be able to

- Create an ability to evaluate arguments and reasoning.
- Think critically as the process of evaluation to separate truth from falsehood, and reasonable from unreasonable belief itself.

Semester II

COURSE: Logic COURSE CODE: PHI-HC-2016

After completion of the course students will understand

- Gives the basic concept of Symbolic logic of Mathematical logic

COURSE: Greek Philosophy COURSE CODE: PHI-HC-2026

After completion of the course students will understand

- The philosophies of the ancient Greece that influenced much of western culture

Semester III

COURSE: Western Philosophy COURSE CODE: PHI-HC-3016

(Descartes to Hegel)

After completion of the course

- Will enables the students to know about thinking of the Western philosophers and their system buildings.

COURSE: Indian Philosophy II COURSE CODE: PHI-HC-3026

After completion of the course students will gain

- Awareness about the objective of educational technology in teachinglearning process and various methods and devices used in teaching.
- Knowledge about innovations in the field of education through technologyand make the students understand the strategies of effective teaching as a profession.

COURSE: Ethics COURSE CODE: PHI-HC-3036

After completion of the course students will understand

- The general concepts of Ethics.

COURSE: Philosophical Counselling COURSE CODE: PHI-SEC-3014

After completion of the course

- Students will able to acquire public speaking skill.

Semester IV

COURSE: Contemporary Indian Philosophy COURSE CODE: PHI-HC-4016

After completion of the course will

- enable the students to know about the philosophical thinking of the great Indian thinkers about the human life and reality

COURSE: **Philosophy of Religion** COURSE CODE: **PHI-HC-4026**

After completion of the course

- Students will be able to know how we can see the religious viewpoints scientifically.

COURSE: **Political & Social Philosophy** COURSE CODE: **PHI-HC-4036**

After completion of the course

- Students will learn about social and political aspects of our society

COURSE: **Critical Thinking** COURSE CODE: **PHI-HC-4014**

After completion of the course

- Students will be able to think Critically and question logically.

B.A. Philosophy (Generic Elective Course)

CBCS

Semester I

COURSE: **General Philosophy** COURSE CODE: **PHI-HG/RC-1016**

After completion of the course

- Students will know what the primary sources of human knowledge are.
- Students will know how they can testify the truth of propositions or statements, about the existence of God and its relation with the world.

Semester II

COURSE: **General Philosophy** COURSE CODE: **PHI-HG/RC-2016**

After completion of the course

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Semester III

COURSE: **Ethics** COURSE CODE: **PHI-HG/RC-3016**

After completion of the course

- Students will gain the general concepts of Ethics.

Semester IV

COURSE: **Logic** COURSE CODE: **PHI-HG/RC-4016**

After completion of the course

- Gives the basic concept of Symbolic logic of Mathematical logic

PROGRAMME OUTCOMES
GOALPARA COLLEGE
DEPARTMENT OF POLITICAL SCIENCE

PROGRAMME: B.A. POLITICAL SCIENCE

1. Prospect of the Course:

A. The students of Political Science Honors have the privilege of undertaking the vast knowledge of the political life of the society, political institutions, political concepts and ideas, state's structure and functions, laws of the land, political philosophies, interstate and intrastate relations, global politics and relations, political economy, non state actors, environmental issues, etc..
B. The students are properly informed about the course and its structure at the time of their admissions.
C. The basic idea behind the program is to fully equip the students for their future endeavors with the prospect of fulfilling their ambitions in various services.
D. Students have the opportunity of acquiring vast knowledge on Indian polity which is considered as the stepping stone towards the dream of becoming a civil servant.
E. Again, students also have the opportunity of learning organizational skills through the course.
F. Students acquire the knowledge of Human rights and national and international laws.
G. They also gather the knowledge of Youth and their role towards nation building.
H. Students can always go for various programs in future with this course.
I. Civil services, academics, government jobs, human resources, politics, self employments, etc are some of the most common choices of career for the students.
J. They can also pursue research work in various topics through the course in their higher studies.

Head of the Department

Course Outcomes

B.A.1st Semester

Course: Understanding Political Theory **Course Code:** POL HC 1016

Course Objective: This course is divided into two sections. Section A introduces the students to the idea of political theory, its history and approaches, and an assessment of its critical and contemporary trends. Section B is designed to reconcile political theory and practice through reflections on the ideas and practices related to democracy.

Course Outcome:

After the completion of the course-

1) Student acquires the basic idea about the discipline.
2) They learn the scope and nature of the discipline.
3) They also get to learn the different approaches of the subject.
4) The best thing about the course is that the students get first hand information about different political and economic ideologies.

5) They also learn about contemporary perspectives in political theory.
6) Students also acquire the knowledge on the theories of Democracy.
7) To introduce the idea of political theory and various approaches.
8) To enable the students to assess the contemporary trends of political theory.
9) To reconcile theory and practice in relation to democracy.

Course: Constitutional Government and Democracy in India **Course Code:** POL HC 1026

Course objective: This course acquaints students with the constitutional design of state structures and institutions, and their actual working overtime. The Indian Constitution accommodates conflicting impulses (of liberty and justice, territorial decentralization and a strong union, for instance) within itself. The course traces the embodiment of some of these conflicts in constitutional provisions, and shows how these have played out in political practice.
It further encourages a study of state institutions in their mutual interaction, and in interaction with the larger extra-constitutional environment.

Course Outcome:

After reading the course, the students would

1) Here, the student learns their constitution in details.
2) The students acquire the knowledge of the philosophy of their constitution, preamble of the constitution and also the basic features of the constitution.
3) Students also acquire vast information on fundamental rights and duties and the directive principle of states policy.
4) They also gather the basic information on the structure of the legislature, executive and judiciary of Indian political system.
5) Students also learn the concept of federalism and the process of decentralization in India with special priority on the local self government and panchayat system.
6) To acquaint students with constitutional design of state structures and institutions.
7) To understand the conflicts in constitutional provisions.
8) To make them comprehend the state institutions in relation to extra constitutional environment.

B.A. 2nd Semester

Course: Political Theory- Concepts and Debates **Course Code:** POL HC 2016

Course Objective: This course is divided into two sections. Section A helps the student familiarize with the basic normative concepts of political theory. Each concept is related to a crucial political issue that requires analysis with the aid of our conceptual understanding. This exercise is designed to encourage critical and reflective analysis and interpretation of social practices through the relevant conceptual toolkit. Section B introduces the students to the important debates in the subject. These debates prompt us to consider that there is no settled way of understanding concepts and that in the light of new insights and challenges, besides newer ways of perceiving and interpreting the world around us, we inaugurate new modes of political debates.

Course Outcome:

After reading the course, the students would

1) Understand the various concepts in political theory and appreciate how they can be helpful to analyze crucial political issues
2) Understand the significance of debates in political theory in exploring multiple perspectives to concepts, ideas and issues.
3) Appreciate how these concepts and debates enrich political life and issues surrounding it.

Course: Political Process in India **Course Code:** POL HC 2026

Course objective: Actual politics in India diverges quite significantly from constitutional legal rules. An understanding of the political process thus calls for a different mode of analysis -that offered by political sociology. This course maps the working of 'modern' institutions, premised on the existence of an individuated society, in a context marked by communitarian solidarities, and their mutual transformation thereby. It also familiarizes students with the working of the Indian state, paying attention to the contradictory dynamics of modern state power.

Course Outcome:

After reading the course, the students would

1) Understand the working of major political institutions in India.
2) Understand the major debates in Indian politics along the axes of caste, gender, region and religion.
3) Understand the changing nature of the Indian state and the contradictory dynamics of modern state

power.

B.A. 3rd Semester

Course: Introduction to Comparative Government and Politics **Course Code:** POL HC 3016

Course objective: This is a foundational course in comparative politics. The purpose is to familiarize students with the basic concepts and approaches to the study of comparative politics. More specifically the course will focus on examining politics in a historical framework while engaging with various themes of comparative analysis in developed and developing countries.

Course Outcome:

After reading the course, the students would

1) □o make students understand the basic concepts in comparative politics□□
2) To make students classify the different political systems and historical context of modern governments,
3) To enable students to have a comparative analysis of countries related to their political institutions and behavior.

Course: Perspectives on Public Administration **Course Code:** POL HC 3026

Objective: The course provides an introduction to the discipline of public administration. This paper encompasses public administration in its historical context with an emphasis on the various classical and contemporary administrative theories. The course also explores some of the recent trends, including feminism and ecological conservation and how the call for greater democratization is restructuring public administration. The course will also attempt to provide the students a comprehensive understanding on contemporary administrative developments.

Course Outcome:

After reading the course, the students would

1) To enable students to learn the basic concepts related to public administration and its importance,
2) To make students learn the major theories of public administration,
3) To enable students to have an understanding of public policy and its formulation,
4) To familiarize students with the major approaches and recent debates related to field of public administration.

Course: Perspectives on International Relations and World History **Course Code:** POL HC 3036

Course Objective: This paper seeks to equip students with the basic intellectual tools for understanding International Relations. It introduces students to some of the most important theoretical approaches for studying international relations. The course begins by historically contextualizing the evolution of the international state system before discussing the agency structure problem through the levels-of-analysis approach. After having set the parameters of the debate, students are introduced to different theories in International Relations. It provides a fairly comprehensive overview of the major political developments and events starting from the twentieth century. Students are expected to learn about the key milestones in world history and equip them with the tools to understand and analyze the same from different perspectives. A key objective of the course is to make students aware of the implicit Euro-centricism of International Relations by highlighting certain specific perspectives from the Global South.

Course outcome:

After reading the course, the students would

1) To make students understand the key theoretical approaches in International relations,
2) To familiarize students with the evolution of International state systems and its importance.
3) To make students aware of the key theoretical debates in International relations
4) To enable students to have an overall understanding of International relations in relation to twentieth century IR history.

B.A. 4th Semester

Course: Political Processes and Institutions in a Comparative Perspective **Course Code:** POL HC 4016

Course objective: In this course students will be trained in the application of comparative methods to the study of politics. The course is comparative in both what we study and how we study. In the process the course aims to introduce undergraduate students to some of the range of issues, literature, and methods that cover comparative political.

Course Outcomes:

After reading the course, the students would

1) To understand, comprehend and analyze the complex nature and functioning of the political systems, political institutions and corresponding issues to these both in a country specific case of India and cross-country perspectives.
2) To demonstrate critical thinking about key issues of political system of different forms, political process and public policy.
3) To use the contents and sub-units of the course as yardsticks for comparing these political systems and processes.

Course: Public Policy and Administration in India **Course Code:** POL HC 4026

Objective: The paper seeks to provide an introduction to the interface between public policy and administration in India. The essence of public policy lies in its effectiveness in translating the governing philosophy into programs and policies and making it a part of the community living. It deals with issues of decentralization, financial management, citizens and administration and social welfare from a non-western perspective.

Course Outcomes:

After reading the course, the students would

1) Be familiarized with and gain knowledge about the processes of public policy making in India and their significance in administering the state.
2) Develop the ability to assess the functioning of the government and the administration in ensuring a citizen centric welfare administration in India.

Course: Global Politics **Course Code:** POL HC 4036

Course objective: This course introduces students to the key debates on the meaning and nature of globalization by addressing its political, economic, social, cultural and technological dimensions. In keeping with the most important debates within the globalization discourse, it imparts an understanding of the working of the world economy, its anchors and resistances offered by global social movements while analyzing the changing nature of relationship between the state and trans-national actors and networks. The course also offers insights into key contemporary global issues such as the proliferation of nuclear weapons, ecological issues, international terrorism, and human security before concluding with a debate on the phenomenon of global governance.

Course Outcomes:

After reading the course, the students would

1) To enable students to understand how to approach a wide range of important global political and economic policy problems and participate in public policy debates on the crucial issues facing the world today.
2) To have knowledge of the essential theoretical assumptions underlying globalization's conceptual frameworks and their relationships to policy interventions.
3) To demonstrate elementary knowledge of major issues and subject-matters surrounding globalization that decides the international relations- *political, economic and security relations*- among the nations.

B.A. 5th Semester

Course: Classical Political Philosophy **Course Code:** POL HC 5016

Course objective: This course goes back to Greek antiquity and familiarizes students with the manner in which the political questions were first posed. Machiavelli comes as an interlude inaugurating modern politics followed by Hobbes and Locke. This is a basic foundation course for students.

Course Outcome:

After reading the course, the students would

1) To interpret ideas underlying traditions in classical political philosophy.
2) To analyze the debates and arguments of leading political philosophers belonging to different traditions of the period.
3) To appraise the relevance of classical political philosophy in understanding contemporary politics.

Course: Indian Political Thought-I **Course Code:** POL HC 5026

Course objective: This course introduces the specific elements of Indian Political Thought spanning over two millennia. The basic focus of study is on individual thinkers whose ideas are however framed by specific themes. The course as a whole is meant to provide a sense of the broad streams of Indian thought while encouraging a specific knowledge of individual thinkers and texts. Selected extracts from some original texts are also given to discuss in class. The list of additional readings is meant for teachers as well as the more interested students.

Course Outcome:

After reading the course, the students would

1) To underline themes and issues in political traditions of pre-colonial India.
2) To compare and contrast positions of different political traditions those were present in pre-colonial India.

3) To evaluate the relevance of political thought of pre-colonial India for contemporary politics.

Course: Human Rights **Course Code:** POL HE 5016

Course Outcome:

After reading the course, the students would

1) To interpret ideas underlying concepts on universality of rights.
2) To analyze the debates and arguments put forward on the working of human rights institutions.
3) To appraise the relevance of rights in universal context and also in national context.

Course: Select Constitutions **Course Code:** POL HE 5046

Course Objective: The course introduces the constitutional and political systems of four (4) countries. Students will have a stronger and more informed perspective on approaches to studying the constitutional and political systems of these countries in a comparative manner.

Course outcomes:

After reading the course, the students would

1) Students will be able to understand the importance of constitutions.
2) This paper is an integral part of public services examinations.
3) Students will be introduced to the various types of constitutions and the forms of governments from different parts of the world.

B.A. 5th Semester

Course: Modern Political Philosophy **Course Code:** POL HC 6016

Course objective: Philosophy and politics are closely intertwined. We explore this convergence by identifying four main tendencies here. Students will be exposed to the manner in which the questions of politics have been posed in terms that have implications for larger questions of thought and existence.

Course Outcome:

After reading the course, the students would

1) To interpret ideas underlying traditions in modern political philosophy.
2) □□□analyze the debates and arguments of leading political philosophers of different philosophical traditions.
3) To appraise the relevance of modern political philosophy in understanding contemporary politics.

Course: Indian Political Thought-II **Course Code:** POL HC 6026

Course objective: Based on the study of individual thinkers, the course introduces a wide span of thinkers and themes that defines the modernity of Indian political thought. The objective is to study general themes that have been produced by thinkers from varied social and temporal contexts. Selected extracts from original texts are also given to discuss in the class. The list of additional readings is meant for teachers as well as the more interested students.

Course Outcome:

After reading the course, the students would

1) To underline themes and issues in political thought of modern India.□
2) To compare and contrast positions of leading political thinkers in India on issues those are constitutive of modern India.
3) To assess the relevance of political thought of modern India in understanding contemporary politics.

Course: Understanding South Asia **Course Code:** POL HE 6026

Course Objective: The course introduces the historical legacies and geopolitics of South Asia as a region. It imparts an understanding of political regime types as well as the socioeconomic issues of the region in a comparative framework. The course also apprises students of the common challenges and the strategies deployed to deal with them by countries in South Asia.

Course Outcome:

After reading the course, the students would

1) To identify geo-political and historical construction of South Asia as a region.
2) To analyze the politics and socio-economic issues of the South Asian Region.
3) To assess the relevance of regionalism in South Asia and India's position in the region.

Course: Social Movements in North east India **Course Code:** POL HE 6046

Course Outcome:

After reading the course, the students would

1) To introduce the students with the social movements of the North-East India and nature of these.
2) To engage them with historical development of such social movements.
3) To understand the new social movements of the region.

PROGRAMME OUTCOMES
DEPARMENT OF SOCIOLOGY
GOALPARA COLLEGE

PROGRAMME: B.A. SOCIOLOGY

Link to Syllabus:

1. CBCS (Honours) Syllabus: https://goalparacollege.ac.in/upload/dept_syllabus/1645982178.pdf
2. CBCS (Regular) Syllabus: https://goalparacollege.ac.in/upload/dept_syllabus/1645982260.pdf

A. Knowledge and Understanding:

a. The programme will develop a new perspective among the students about the world around them which is called sociological perspective.
b. By adopting the sociological perspective, the students will be able to look beyond commonly held beliefs to determine the hidden meanings behind human actions.
c. The sociological perspective will help the students to understand that people's behaviour is influenced by social factors.
d. The programme will provide students with better understanding of the reasons for social differences including differences in social behaviour, group opportunities and outcomes.
e. The sociological perspective can help the students view the world through the eyes of others.
f. By developing this perspective the students will be able to use the sociological imagination, i.e. the ability to see a connection between the larger world and one's personal life.
g. The programme will help the students not only to have a better understanding about the world around them, but also it helps to better understand their own lives.
h. It will provide a greater understanding of the complex and simple nature of human societies.
i. It will enable the students to understand the structure and fabric of human societies, and the influential relationship between society and people.

B. Practical Skills:

a. The students will learn both tangible and intangible skills, the more tangible skills include research skills particularly the ability to conduct data analysis.
b. It will develop critical thinking ability and analytical skills about various social issues.
c. The students will develop the reading, writing and oral communication skills.
d. The students will learn social skills such as communication skills, ability to interact with people from different social backgrounds, cultural competence and empathy.
e. The students will develop research skills including quantitative literacy and statistical reasoning skills.
f. The students will be able to comprehend and learn scientific methods for studying society.

C. Prospects of Employment:

a. After the successful completion of the course, a student will be eligible to pursue higher studies such as MA (Sociology) in different reputed institutions across the country.
b. A student of BA Sociology can be absorbed as a social science teacher in a school.

c. The students of BA Sociology can make their career as social worker by using the knowledge of social dynamics to analyze social issues and find ways to resolve them.
d. The students of BA Sociology can be absorbed in news agencies and publications as journalist for their better understanding of social circumstances.
e. The students may take various training after completion of BA and may get a scope to serve the country through civil services.
f. The students of BA Sociology can get employment as counselor in various fields such as rehabilitation counselor, familial counselor, etc.
g. The students can build their career in community and youth development which mainly focus on social welfare amongst youth and vulnerable people as well as the wider community.
h. The students with Sociology degree can build their careers in politics, activism and the charity sector.
i. The students of BA Sociology can make their career in business and marketing because of having strong analytical and critical thinking skills.
j. The students can be employed as research assistant in various public and private organizations for data collection and statistical analysis to create well-informed reports.
k. The students of Sociology can also be employed as policy analysts to observe social issues and recommend legislators to address these issues.

Course Outcomes: B.A. 1st Semester

Course: Introduction to Sociology-A **Course Code: SOC-HC-1016**

After the completion of the course-

- The students will be able to understand the historical trajectory of the discipline of Sociology.
- The students will be introduced with the basic sociological concepts which will provide a foundation for the other more detailed and specialized courses in Sociology.
- It will enable the students to comprehend the social reality through the sociological concepts.
- It will introduce the students to a sociological way of thinking.

Course: Sociology of India-A **Course Code: SOC-HC-1026**

After the completion of the course-

- The students will be able to understand India as an object of sociological study and knowledge.
- It will enable the students to understand the existing and evolving discourses and ideologies on Indian society.
- It will enable students to have an understanding on when, how and in what context Sociology as an academic discipline has emerged in India.
- The students will be able to understand key concepts and institutions which are useful for the understanding of Indian society.

Course: Introduction to Sociology **Course Code: SOC-HG/RC-1016**

After the completion of the course-

- The students will be able to understand the historical trajectory of the discipline of Sociology.
- The students will be introduced with the basic sociological concepts which will provide a foundation for the other more detailed and specialized courses in Sociology.
- It will enable the students to comprehend the social reality through the sociological concepts.

Course Outcomes: B.A. 2nd Semester

Course: Introduction to Sociology-B **Course Code: SOC-HC-2016**

After the completion of the course-

- The students will have a general introduction to sociological thoughts.
- It will provide a foundation for sociological perspectives.
- It will give the students a flavor of how over a period of time thinkers have conceptualized various aspects of society.
- It will enable the students to comprehend social reality through sociological perspectives.

Course: Sociology of India-B **Course Code: SOC-HC-2026**

After the completion of the course-

- The students will be able to understand the variety of ideas and debates about India.
- It will enable the students to critically engage with the multiple socio-political forces and ideologies which shape the terrain of the nation.
- The students will be able to understand and analyze the changing dynamics and the contemporary challenges of Indian society.
- It will facilitate the students to theorize and analyze critically the contemporary Indian society.

Course: Sociology of India **Course Code: SOC-HG/RC-2016**

After the completion of the course-

- The students will be able to understand the trajectory of growth and development of Sociology as an academic discipline in India.
- It will enable the students to understand the contribution of Indian sociologists in the development of the discipline.
- It will enable the students to understand the prominent institutions which are cardinal to Indian society.

Course Outcomes: B.A. 3rd Semester

Course: Political Sociology **Course Code: SOC-HC-3016**

After the completion of the course-

- The students will be able to understand some major theoretical debates and concepts in Political Sociology.
- It will enable the students to understand the contemporary political issues that are influencing the society.
- It will help the students in developing a comparative understanding of political relationships through themes such as power, governance and state and social relationships.

Course: Economic Sociology **Course Code: SOC-HC-3026**

After the completion of the course-

- The students will have an understanding of the social and cultural bases of economic activity.
- It will enable the students to understand about how social processes are crucially inter-related with economic processes.
- It will enable the students to understand the significance of sociological analysis for the study of economic processes in local and global contexts.

Course: Sociology of Gender **Course Code: SOC-HC-3036**

After the completion of the course-

- The students will be able to understand gender as a critical sociological lens of enquiry in relation to various social fields.
- It will enable the students to understand the categories of gender, sex and sexuality, and to interrogate the social construction of gender.
- It will enable the students to understand about how gender interacts with other social forces in society and how gender relates to the overall social structure.

Course: Sociological Theories **Course Code: SOC-HG/RC-3016**

After the completion of the course-

- The students will be able to understand the contributions of classical sociological thinkers whose work has shaped the discipline of Sociology.
- The students will be able to acquire a broad overview on various issues, concerns since the development of Sociology as an academic discipline.
- It will give the students a flavor of how over a period of time thinkers have conceptualized various aspects of society.

Course Outcomes: B.A. 4th Semester

Course: Rural Sociology in India **Course Code: SOC-HC-4016**

After the completion of the course-

- The students will be able to understand the various components of rural social structure and to analyze the effect of religion, customs and tradition on rural social structure.
- It will enable the students to make a scientific, systematic and comprehensive study of the rural social structure, function and objective tendencies of development.
- And on the basis of such a study it will help students to suggest ways for improving village conditions and discover the laws of its development.

Course: Urban Sociology in India **Course Code: SOC-HC-4026**

After the completion of the course-

- The students will get an exposure to key theoretical perspectives for understanding urban life in history and contemporary contexts.
- It will enable the students to make a scientific, systematic and comprehensive study of the urban space, its social organization, structure and function.
- It will provide the students a better understanding about the complexities of urban living with some case studies from India and other parts of the world.

Course: Sociology of Family, Marriage and Kinship **Course Code: SOC-HC-4036**

After the completion of the course-

- The students will be able to elaborate and compare the concepts of family, marriage and kinship as social institutions, and its development as a subject of sociological study.
- It will enable students to analyze socio-cultural, economic and political forces that shape family, marriage and kinship in society.
- It will enable the students to conceptualize and theorize the social institutions of family, marriage and kinship, and to understand the changes in contemporary period.

Course: Methods of Sociological Enquiry **Course Code: SOC-HG/RC-4016**

After the completion of the course-

- The students will have general understanding on methodologies of sociological research methods.
- It will enable the students to understand about process of social research by formulating research design, data collection and data analysis.
- It will provide the students with basic knowledge on how research is actually done in quantitative and qualitative manner.

Course Outcomes: B.A. 5th Semester

Course: Sociological Thinkers-I **Course Code: SOC-HC-5016**

After the completion of the course-

- The students will be introduced to the classical sociological thinkers whose work has shaped the discipline of Sociology.
- It will enable students to acquire a broad overview on various issues, concerns since the time of its inception as an academic discipline.
- It will introduce the students with foundation in the making of the discipline of Sociology through selected texts by key sociological thinkers.

Course: Sociological Research Methods-I **Course Code: SOC-HC-5026**

After the completion of the course-

- The students will be introduced with sociological research methods and how research is actually done.
- It will provide the students with skills to conceptualize research problem and carry out their research work.
- It will provide students with some elementary knowledge of the complexities and philosophical underpinnings of research.

Course: Social Stratification **Course Code: SOC-HE-5036**

After the completion of the course-

- The students will have the knowledge on sociological study of social inequalities.
- It will acquaint students with principal theoretical perspectives on social inequality.
- It will enable students to understand the sociological perspectives on diverse forms of social inequality in articulation with each other.

Course: Sociology of Religion **Course Code: SOC-HE-5046**

After the completion of the course-

- The students will have an understanding on religious over individual religions.
- It will enable students to understand the linkage between social and religious through different themes.
- It will provide students an understanding on the existence of religion in society, its role in determining human behaviour and activities.

Course: Rural Sociology in India **Course Code: SOC-RE-5016**

After the completion of the course-

- The students will be able to describe and explain the basic characteristics of the rural society in India.
- It will help students in gaining comprehensive knowledge and understanding of the dynamics of rural society in India.
- It will enable students to develop ideas and analyze the progress, transformation and changing nature of rural society in India.

Course Outcomes: B.A. 6th Semester

Course: Sociological Thinkers-II **Course Code: SOC-HC-6016**

After the completion of the course-

- The students will be introduced with post-classical sociological thinking through some original texts.
- It will provide the students an understanding on contemporary sociological thinking.
- It will enable students to conceptualize the contemporary social issues through post-classical sociological thoughts.

Course: Sociological Research Methods-II **Course Code: SOC-HC-6026**

After the completion of the course-

- The students will be able to understand the basic concept and importance of research.
- It will provide the students with knowledge on the process of social research, formulating research design, methods of data collection and analysis.
- It will provide students with the elementary knowledge and understanding on how to conduct both quantitative and qualitative research.

Course: Social Demography **Course Code: SOC-HE-6016**

After the completion of the course-

- The students will have a critical understanding of the interface between population and society.
- It will enable students to achieve broader knowledge about the population dynamics.
- It will enable students to enquire the trends of population and its relationships with the different aspects of social organization and institutions in the area.

Course: Sociology of Social Movements **Course Code: SOC-HE-6026**

After the completion of the course-

- The students will be able to look at social movements from a sociological perspective.
- It will enable students to understand the effects of social movements in bringing change in society.
- It will introduce students the contexts and concepts of social movements through concrete case studies.

Course: Urban Sociology in India **Course Code: SOC-RE-6016**

After the completion of the course-

- The students will have an understanding of the urban communities and structures of social organizations through sociological knowledge.
- It will provide the students with the knowledge on the distinctness of the urban dimensions in India.
- It will enable students to develop an understanding of the fundamental social reality, social process and change in development perspective of urban communities.

DEPARTMENT OF BOTANY
GOALPARA COLLEGE
PROGRAMME OUTCOMES

Link to the Syllabus:

1. Botany Honours course (CBCS): https://goalparacollege.ac.in/upload/dept_syllabus/1645081218.pdf
2. Botany Regular course (CBCS): https://goalparacollege.ac.in/upload/dept_syllabus/1645081264.pdf
3. Botany Major (Non-CBCS): https://goalparacollege.ac.in/upload/dept_syllabus/1646802757.pdf
4. Botany General (Non-CBCS): https://goalparacollege.ac.in/upload/dept_syllabus/1646802757.pdf

PROGRAMME: B.SC. BOTANY

PROGRAMME SPECIFIC OUTCOME

1. Knowledge and Understanding:

a. Diversity of plants and microbes in terms of structure, function, reproduction andecological roles.
b. Evaluation and assessment of plant diversity.
c. Plant systematics and classification.
d. Value of biodiversity in terms of ecological balance and sustainable development.
e. Application of Statistics in biological data analysis.
f. Application of *in-silico* techniques in biological science.
g. Basics of biotechnology, biochemistry, genetics and modern biological tools andtechniques.

2. Intellectual Skills:

a. Logical interpretation of problems related to biological science.
b. Searching various burning issues related to biology, environment and sustainabledevelopment though internet.
c. Capacity building for individual survey works related to nature and environment.

3. Practical Skills:

a. Study of plant and microbial diversity.
b. Plant classification and identification, anatomy, morphology, plant physiology,plant biochemistry, genetics, plant breeding etc.
c. Ecological study of the local area.

d. *In-silco* techniques in biological science.

e. Preliminary skills on biotechnology, horticulture, biofertilizers, nursery techniquesetc.

4. Transferable Skills:

a. Use of information technology for accumulation and sharing of data.

b. Dissemination of scientific ideas in writing and orally.

c. Creation of team spirit.

d. Access of E- library resources.

e. Regularity, punctuality, devotion and career planning.

5. Scientific Knowledge and problem analysis:

Application of principles of basic science in studying and analysing problems andphenomena related to biological science.

6. Usage of Modern tools:

a. Practical application of modern techniques/ instruments in Biochemical and molecular analysis, Biotechnology, *in vitro* culture, microbiology etc.

7. Ethics:

a. Application of moral and ethical principles to mitigate environmental issues andbiodiversity conservation.

b. Basic knowledge on environment and sustainable development will createresponsible citizens.

Dr. Someswar Rao
Head
Department of Botany

DEPARTMENT OF BOTANYGOALPARA COLLEGE

Course Outcomes (CBCS)

B.Sc. Botany Honours

Semester I

COURSE**: Phycology and Microbiology** COURSE CODE**: BOT-HC-1016**

After completion of course

- Students will gain basic knowledge on viruses and bacteria, and their importance in agriculture and medicine.
- Gain basic knowledge on Algal classification and their Economic and Ecological Importance.
- Practical knowledge on structure and life cycle of Bacteriophage microscopy of bacteria andalgae will be attained.

COURSE: Biomolecules and Cell Biology COURSE CODE: BOT-HC-1026

After completion of the course Students will have a clear idea

- About the structure, classification and physicochemical properties of bio-molecules and enzymes.
- Of structure, properties and functions of cell and its components
- Practical knowledge on properties of cell, microscopy of plant cell and qualitative tests ofbio-molecules

Semester: II

COURSE: Mycology and Phytopathology COURSE CODE: BOT-HC-2016

After completion of the course students will develop

- Basic knowledge on different classes of fungi, their structure, classification, life cycle and reproduction.
- Basic knowledge on diseases in plants caused by viruses, bacteria and fungi andbiotechnological applications of fungi
- Basic knowledge about the symbiotic relationships of Fungi.

COURSE: Archegoniate COURSE CODE: BOT-HC-2026

After completion of the course students will obtain

- Basic knowledge on morphology, anatomy, classification and properties of bryophytes, pteridophytes and gymnosperms.
- Basic knowledge on reproduction and economic importance and ecological significance of bryophytes, pteridophytes and gymnosperms.
- Practical knowledge on morphology and reproductive structures of bryophytes, pteridophytes and gymnosperms.

Semester III

COURSE**: Morphology and Anatomy of Angiosperms** COURSE CODE**: BOT-HC-3016**

After completion of the course students will understand

- The morphology of angiosperms, anatomical organization of tissues and developmental biology of plant body
- Practical knowledge on inflorescences, fruits of angiosperms and anatomicalfeatures of plant body.

COURSE: Economic Botany COURSE CODE: BOT-HC-3026

After completion of the course students will gain

- Basic knowledge on morphology of economically important plants such as cereals,legumes, spices, Fibres, Timber plants, Drug-yielding plants etc.
- Practical Knowledge on micro-chemical tests of economical plants.

COURSE: Genetics COURSE CODE: BOT-HC-3036

After completion of the course students will gain

- Knowledge on Mendelian concepts in genetics; structure, functions and propertiesof chromosome; chromosomal aberration
- Knowledge on gene structures and gene mutations, population genetics
- Practical knowledge on chromosomal mapping and gene interaction studies
- Practical visualization of chromosomal anomalies

Semester IV

COURSE**: Molecular Biology** COURSE CODE**: BOT-HC-4016**

After completion of the course students will obtain

- Detailed knowledge on architecture of nucleic acids, organization of DNA inorganisms, models of replication and the factors associated with it
- Detailed knowledge on transcriptional and post transcriptional events in a cell,translation of proteins
- Practical acquaintance of isolation and quantification of DNA from plants.
- Knowledge on photographic study of RNA polymerases and RNA modificationmachinery

COURSE: Plant Ecology and Phytogeography COURSE CODE: BOT-HC-4026

After completion of the course students will attain

- Knowledge on origin, formation and properties of abiotic components of theecosystem, interactions and adaptation of plants with biotic and abiotic factors
- Knowledge on properties of communities in a population and trophical and habitatorganization in an ecosystem
- Practical knowledge on property analysis of abiotic components of the ecosystem
- Practical knowledge on vegetation study and different ecological sites

COURSE: Plant Systematics COURSE CODE: BOT-HC-4036

After completion of the course students will gain

- Knowledge on plant identification and classification systems, plant nomenclature
- Knowledge on phylogenetic and evolutionary relationships of angiosperms
- Practical knowledge on foliar morphology and taxonomical study of angiosperms

Skill Enhancement Paper

COURSE**: Biofertilizers** COURSE CODE**: BOT-SE-3014**

After completion of the course the students will develop

- Basic knowledge on the microbes used as biofertilizer and understand the process of their isolation, identification, mass multiplication, carrier based inoculants and knowledge on Actinorrhizal symbiosis
- Concept on the general characteristics, isolation, mass multiplication carrier based inoculants of Azospirillum and Azotobacter also the knowledge on the crop response to Azotobacter
- Basic knowledge on Cyanobacteria including factors affecting growth of Cyanobacteria, concept on the nitrogen fixation and use of blue green algae in rice cultivation
- Brief knowledge on the Mycorrhizal association and understand the details of various types, taxonomy, occurrence, distribution and growth parameters of Mycorrhiza
- Details about the organic farming, maintenance and recycling of biodegradable waste material and understand the methods of making biocompost and vermicompost with application

B.Sc Botany (Generic Elective Courses)

CBCS

Semester I

COURSE: Biodiversity (Microbes, Algae, Fungi and Archegoniate) COURSE CODE: BOT-HG-1016

After completion of the course the students will gain

- Knowledge on structure and reproduction of viruses and bacteria, and their economic importance
- Describe general characteristics, morphological diversity, thallus organization, life cycles, ecological and economic importance of algae
- Describe general characteristics, morphological diversity, thallus organization, life cycles, ecological and economic importance of fungi
- General characteristics, classification, morphological diversity and evolutionary significance of bryophytes
- General characteristics and classification of pteridophytes; evolution of stele, heterosporyand seed habit in pteridophytes

- Classify gymnosperms, and describe their general characteristics and economicimportance.
- Practical knowledge on staining and slide preparation to study bacteria, algae and fungiunder the microscope.
- Practical knowledge on vegetative and reproductive structures of some representative bryophytes, pteridophytes and gymnosperms

Semester II

COURSE**: Plant Ecology and Taxonomy** COURSE CODE**: BOT-HG-2016**

After completion of the course students will obtain

- Understanding of soil, water, light and temperature as ecological factors Knowledge onadaptive characters of hydrophytes and xerophyte
- Knowledge on plant community types and their succession
- Knowledge on ecosystem, trophic levels and energy flow in ecosystems
- Knowledge on biogeochemical cycling with an emphasis on carbon, nitrogen andphosphorus cycles CO6. General idea on phytogeography and endemism
- Knowledge on plant taxonomy, principles, ICN rules, ranks and hierarchy Knowledge on different systems of plant classification and cluster analysis
- Practical knowledge on soil temperature measurement, humidity measurement, rainfall estimation and light intensity measurement
- Adaptive morphological characterization of hydrophytes and xerophytesQuadrate size determination for herbaceous plant studies in ecology
- Estimation of frequency distribution of herbaceous plants using quadrate method
- Practical knowledge on plant identification upto the family level that belongs toBrassicaceae, Solanaceae and Lamiaceae; Preparation of herbarium specimens

Semester III

COURSE**: Plant Physiology and Metabolism** COURSE CODE**: BOT-HG-3016**

After completion of the course students will gain

- Understanding about the roles of water in plant physiology, transpiration, and guttation
- Knowledge of macro - and micro-nutrients and mineral uptakes in plants
- Understanding the transportations of minerals and foods in plants
- Knowledge on photosynthetic pigments, photosynthetic reactions and photorespiration

- Understanding of respiration processes – glycolysis, TCA and PPP pathways
- Knowledge on enzyme properties, actions and inhibitions
- Knowledge on biological nitrogen fixation
- Knowledge on plant hormones, and plant responses to light and temperature
- Analytical skill of determining osmotic potentials of plant cells and effect of light on transpiration
- Analytical skill of calculating stomatal index and frequency
- Knowledge about the effect of pH and concentrations in catalase activity
- Understanding of the effect of bicarbonate concentration on O2 evolution in photosynthesis

Skill Enhancement Paper

COURSE: **Biofertilizers** COURSE CODE: **BOT-SE-3014**

After completion of the course students will gain

- Basic knowledge on the microbes used as biofertilizer and understand the process of their isolation, identification, mass multiplication, carrier based inoculants and knowledge on Actinorrhizal symbiosis
- Concepts of the general characteristics, isolation, mass multiplication carrier based inoculants of Azospirillum and Azotobacter also the knowledge on the crop response to Azotobacter
- Basic knowledge on Cyanobacteria including factors affecting growth of Cyanobacteria, concept on the nitrogen fixation and use of blue green algae in rice cultivation
- Brief knowledge on the Mycorrhizal association and understand the details of various types, taxonomy, occurrence, distribution and growth parameters of Mycorrhiza
- Details about the organic farming, maintenance and recycling of biodegradable waste material and understand the methods of making biocompost and vermicompost with application

Semester IV

COURSE**: Plant Anatomy and Embryology** COURSE CODE**: BOT-HG-4016**

After completion of the course students will obtain

- Knowledge on different types of tissues and their organizations in plants

- Knowledge on secondary growth and anomalous structures in plants
- Knowledge on adaptive and protective characters of plants
- Understanding the reproductive units of a flower; ovule types, ovary types, pollinationand fertilization mechanisms; embryo and endosperm developments and functions
- Hands on experiences on slide preparation for anatomical studies of leaf, stem and root
- Flower dissection and study of flower reproductive parts and events

COURSE: Economic Botany and Plant Biotechnology

COURSE CODE: BOT-HG-4026

After completion of the course students will gain

- Understanding of the concept of 'centre of origin of crop plants' and their distribution witha special emphasis on wheat
- Overall knowledge on economically important crops with their botanicalcharacters and parts used
- Knowledge on plant tissue culture and the basic molecular techniques used inbiotechnology
- Basic concept of bioinformatics and its application.

DEPARTMENT OF CHEMISTRY

Goalpara College

Course outcomes: B.Sc. in Chemistry

Chemistry Honours (CBCS):

https://goalparacollege.ac.in/upload/dept_syllabus/1644055735.pdf

Chemistry (Regular) CBCS:

https://goalparacollege.ac.in/upload/dept_syllabus/1644055784.pdf

Chemistry Major & General (Non-CBCS):

https://goalparacollege.ac.in/upload/dept syllabus/1646722822.pdf

The expected outcomes of the courses provided by the Department of Chemistry, Goalpara College, are listed below:

1. The course will definitely improve the skill of the students. The students will learn different techniques and standard operating procedures.
2. It will enhance the quality of the learning and teaching processes to inspire original thinking through concrete exposure to experimental work and participation in different innovative courses in other institutes. Consequently, it will encourage networking and bonding with neighbouring institutions.
3. Students will be familiarized with modern techniques, processes and terminologies of decent equipments and software in chemistry.
4. The course will certainly strengthen the academic and physical infrastructure with advanced learning techniques.
5. The course will create an awareness of the impact of chemistry on the environment, society, and development outside the scientific community with specialized training programmes which can illustrate versatile applications of Chemistry with significant implications on the students and the faculties,.
6. The course will definitely increase the potential of core instrumentation resources by procuring new equipment and obviously will upgrade the existing facilities.
7. The course will help to generate the green route for chemical reaction for sustainable development which will offer a direct application of Chemistry towards society, and environment.
8. The course will help to learn how to demonstrate, solve and understand the major concepts in all disciplines of chemistry.
9. The course will assist to inculcate the scientific temperament in the students and outside the

scientific community.

10. On completion of the course, students should be able to solve the problem and also think methodically, independently and can draw a logical conclusion.

Course Outcomes

B.Sc. 1st Semester (Honours)

Course: Inorganic Chemistry-I

Course Code: CHE-HC-1016

On successful completion, students would have:

1. Clear understanding of the concepts related to atomic and molecular structure, and basic quantum chemistry treatment.
2. Comprehensible idea about periodic classification of elements in the periodic table and changes in properties along the periods and groups.
3. Basic idea on chemical bonding including ionic bond, covalent bond, metallic bond, weak chemical forces and redox behavior of chemical species.
4. Laboratory skills of basic quantitative analytical techniques related to volumetric titrations through acid-base and redox reactions.

Course: Physical Chemistry-I

Course Code: CHE-HC-1026

After completion of the course, students will learn about:

1. The kinetic theory of gases, ideal gas and real gases. In this chapter they will learn the most important physical chemistry equation “the equation of state”. They will earn to construct a model of the departures of real gases from perfect gases and learn to construct, interpret and use of van der Waals equation of state.
2. In liquid state unit, the students are expected to learn the qualitative treatment of the structure of liquid along with the physical properties of liquid, *viz.* vapour pressure, surface tension and viscosity.
3. In the molecular and crystal symmetry unit, they will be introduced to the elementary idea of symmetry which will be useful to understand solid state chemistry and group theory in some higher courses. In solid state unit the students will earn the basic solid state chemistry application of X-ray crystallography for the determination of some very simple crystal structures.
4. The students will also learn another important topic, i.e. ionic equilibrium. In this chapter, they will

earn about ionic equilibria involving dissociation of weak acids and weak bases in aqueous solutions, dissociation of sparingly soluble salts in aqueous solutions, dissociation of water, p^H-scale and also about the importance of buffer solution.

5. In the lab, on successful completion of this course, students will be able to measure the surface tension and viscosity of a given solution using certain method specified in the course and to study the variation of the both property of the solution with concentration of the solute. They will also learn the indexing of a given power diffraction pattern of a cubic crystalline system, about buffer solution, preparation of buffer solution, p^H metric and to measure the dissociation constant of a weak acid.

B.Sc. 1st Semester (Generic/Regular Chemistry)

Course: Chemistry-1

Course Code: CHE-RC/HG-1016

After completion of this course:

1. The students will learn the atomic structure through basic concept of quantum mechanics. They will understand the chemical bonding through VB and MO approaches.
2. In organic part, the students are expected to learn basic ideas used in organic chemistry, stereochemistry, functional groups, alkanes, alkenes and alkynes.
3. In the laboratory, students will have hands on experience on volumetric analysis of some inorganic salts and metal ions. In organic chemistry part, students will learn to detect extra element present in the given organic sample through systematic analysis. They will also learn to carry out chromatographic separation of a given organic mixture.

Course Outcomes

B.Sc. 2nd Semester (Honours)

Course: Organic Chemistry I

Course Code: CHE-HC-2016

On successful completion of this course, students will be able:

1. To identify different classes of organic compounds and learn their nomenclature.
2. To identify different types of reagents and reaction intermediates.
3. To understand the shape of the molecules using hybridisation concept.
4. To explain/analyze their reactivity, mechanism based on different electronic displacement factors in addition to their stereo chemical aspects.
5. In lab course, students will have hands on experience on checking the calibration of the thermometer, purification of organic compounds by crystallisation, checking of the purity of organic compound by measuring melting point, determination of boiling point of liquid compounds, chromatographic separation of organic mixtures.

Course: Physical Chemistry II

Course Code: CHE-HC-2026

1. In this course the students are expected to learn laws of thermodynamics, thermochemistry, thermodynamic functions, relations between thermodynamic properties, Gibbs Helmholtz equation, Maxwell relations etc.
2. Moreover the students are expected to learn partial molar quantities, chemical equilibrium, solutions and colligative properties.
3. After completion of this course, the students will be able to understand the chemical systems from thermodynamic point of view.
4. In laboratory, on successful completion of this course students will have hand on experience on determination of heat capacity of a calorimeter, enthalpy of neutralization, enthalpy of ionization, integral enthalpy, enthalpy of hydration, basicity/protocity of a polyprotic acid by the thermochemical method and study of solubility of benzoic acid in water.

B.Sc. 2nd Semester (Generic/Regular Chemistry)

Course: Chemistry-2

Course Code: CHE-RC/HG-2016

After completion of this course:

1. The students will learn periodic properties of main group elements and transition elements.
2. They will also learn the crystal field theory in coordination chemistry unit.
3. In physical chemistry part, the students are expected to learn kinetic theory of gases, ideal gases and real gases, surface tension, viscosity, basic solid state chemistry and chemical kinetics
4. In laboratory, working through this course, students are expected to develop their skills and knowledge for semi-micro qualitative analysis of at least mixture of four ionic species and quantitative measurement of various ions in a given solution. They will also learn to measure surface tension and viscosity of a liquid, kinetics of certain reactions.

Course Outcomes

B.Sc. 3rd Semester (Honours)

Course: Inorganic Chemistry-II

Course Code: CHE-HC-3016

On successful completion of this course students would be able:

1. To apply theoretical principles of redox chemistry in the understanding of metallurgical processes.
2. To identify the variety of s and p-block compounds and comprehend their preparation, structure, bonding, properties and uses.
3. To explain the use of terms Hard and Soft in relation to metal ions and ligands terms of hard and soft interactions and discuss the stability of complexes.
4. To explain chemistry of noble gases and their compounds; application of VSEPR theory in explaining structure and bonding to know about Inorganic polymers and their uses.
5. Laboratory experiments in this course will boost their quantitative estimation skills and introduce the students to preparative methods in inorganic chemistry.

Course: Organic Chemistry-II

Course Code: CHE-HC-3026

On completion of the course, students will be able:

1. To learn and differentiate between various organic functional groups and method of their synthesis.
2. To classify organic compounds in terms of their functional groups and reactivity.
3. To explain, analyse and design transformations between different functional groups.
4. To learn about the different reaction mechanism involves in the given functional group

transformations.

5. In laboratory students will have hands on experience on test of functional groups present in a given organic sample by systematic analysis, preparation of some organic compounds using conventional method or green approach.

Course: Physical Chemistry-III

Course Code: CHE-HC-3036

On completion of the course the students are expected to learn:

1. Phase equilibrium and its application in some specific systems. They will also learn the most important thermodynamic property "chemical potential", the Clausius-Clapeyron equation phase diagram for one component system, solid-liquid equilibria involving eutectic, congruent and incongruent melting points etc.
2. In the Chemical kinetics chapter they will learn rate laws of chemical transformation, experimental methods of rate law determination, steady state approximation, rate determining state approximation etc.
3. In the Surface chemistry chapter students will be able to understand different types of surface adsorption processes and basics of catalysis including enzyme catalysis, acid base catalysis and particle size effect on catalysis.
4. In laboratory, students will be able to conduct the physical experiments of phase eqilibria *viz.*, construction of phase diagram, determination of critical solution temperature and composition of the phenol-water system, study the effect of impurities on critical solution temperature and composition of the phenol-water system, determination of distribution coefficient, study the equilibrium and kinetic of a reaction.
5. They will also able to study a given absorption isotherm.

B.Sc. 3rd Semester (Generic/Regular Chemistry)

Course: Chemistry-3

Course Code: CHE-RC/HG-3016

After completion of this course, the students will able:

1. To understand the chemical system from thermodynamic points of view.
2. They will also learn two very important topics in chemistry- chemical equilibrium and ionic equilibrium.
3. The students are expected to learn various classes of organic molecules-alkyl halides, aryl halides, alcohols, phenols, ethers, aldehydes and ketones.
4. In laboratory, students will learn the practical applications of thermochemistry and ionic equilibria. The students will be taught to handle p^H meter.

5. Purification of organic compounds by crystallization and organic preparation techniques will be learned.

Skill Enhancement Course (For 3rd Semester)

Course: Basic Analytical Chemistry

Course Code: CHE-SE-3034

Upon completion of this course:

1. Students shall be able to explain the basic principles of chemical analysis.
2. They will be able to design/implement micro scale and semimicro experiments, record, interpret and analyze soil, water, food products cosmetics etc. via different techniques such as Paper chromatography, TLC etc.

Course Outcomes

B.Sc. 4th Semester (Honours)

Course: Inorganic Chemistry-III

Course Code: CHE-HC-4016

On successful completion, students will be able to:

1. Name coordination compounds according to IUPAC, explain bonding in this class of compounds, understand their various properties in terms of CFSE and predict reactivity, d-orbital splitting in complexes, chelate effect, polynuclear, labile and inert complexes.
2. Understanding the nomenclature of coordination compounds/ complexes, Molecular orbital theory, d-orbital splitting in tetrahedral, octahedral, square planar complexes, chelate effects.
3. To appreciate the general trends in the properties of transition elements in the periodic table and identify differences among the rows, and chemistry of first raw transition elements.
4. Understanding the transition metals stability in reactions, origin of colour and magnetic properties.
5. Understanding the separation of Lanthanides and Actinides, its colour, spectra and magnetic behaviour.
6. Understanding the bioinorganic chemistry of metal ions in biological systems, Haemoglobin-storage and transfer of iron, Na/K pump, Carbonic anhydrase and Carboxypeptidase, about trace metals.
7. Toxicity of various metals and mechanism of metal-biological interactions, use of chelating agents in medicine.
8. In laboratory, through the experiments students will be able to prepare, estimate or separate metal complexes/compounds but also will be able to design experiments independently which they should be able to apply if and when required.

Course: Organic Chemistry-III

Course Code: CHE-HC-4026

After the completion of the course, students will learn:

1. To identify and classify different types of N-based derivatives, alkaloids, terpenes, heterocyclic compounds and polynuclear hydrocarbons.
2. To explain their structure and reactivity.
3. To critically examine their synthesis and reaction mechanisms. About the synthetic applications of diazonium salts.
4. To identify the natural source of alkaloids and terpenes and systematic elucidation of their structure.
5. In laboratory, students are expected to learn to detect the extra elements and function groups present in a given organic sample.

Course: Physical Chemistry-IV

Course Code: CHE-HC-4036

After completion of the course:

1. Students will learn theories of conductance and electrochemistry.
2. Students will also understand some very important topics such as solubility and solubility products, ionic products of water, conductometric titrations etc.
3. The students are also expected to understand the various parts of electrochemical cells along with Faraday's Laws of electrolysis.
4. The students will also gain basic theoretical idea of electrical & magnetic properties of atoms and molecules.
5. In laboratory, the student will be able to determine a cell constant, equivalent conductance, degree of dissociation and dissociation constant of a weak acid, to perform various conductometric and potentiometric acid-base titrations.

B.Sc. 4th Semester (Generic/Regular Chemistry)

Course: Chemistry-4

Course Code: CHE-RC/HG-4016

After completion of this course:

1. The students learn solutions, phase rule and its application in specific cases.
2. They will be taught basics of conductance and electrochemistry.
3. Students will also learn some important topics of organic and biochemistry- carboxylic acids,

amines, amino acids, peptides, proteins and carbohydrates.

4. Synthesis and reaction mechanisms of organic compounds containing –COOH, -NH_2 functional groups will be studied.
5. In laboratory, the students will learn the experimentation of distribution law, phase equilibria, conductance, and potentimetry.
6. They will also learn systematic qualitative analysis of Organic Compounds possessing monofunctional groups (-COOH, phenolic, aldehydic, ketonic, amide, nitro, amines) and preparation of derivatives.
7. They will acquire knowledge regarding some important experiments like separation of amino acids by paper chromatography, determination of the saponification value of an oil/fat, extraction of DNA from onion/ cauliflower, etc.

Skill Enhancement Course (For 4th Semester)

Course: Green Methods in Chemistry

Course Code: CHE-SE-4024

After completion of the course, students shall be able to:

1. Understand importance of green methods in chemistry.
2. They will be able describe and evaluate chemical products and processes from environmental perspective, define and propose sustainable solutions and critically assess the methods for waste reduction and recycling.
3. They will be able to use tools of Green chemistry, and will be made familiar with twelve principles of Green Chemistry.

Course Outcomes

B.Sc. 5th Semester (Honours)

Course: Organic Chemistry-IV

Course Code: CHE-HC-5016

After the completion of this course:

1. Students will be able to explain/describe the important features of nucleic acids, amino acids and enzymes and develop their ability to examine their properties and applications.
2. Students will have concept of Energy in Biosystems.
3. Students will become familiar with Pharmaceutical Compounds: Structure and Importance.
4. In laboratory, students will learn to analyses sensitive bio compounds.

Course: Physical Chemistry-V

Course Code: CHE-HC-5026

After completion of this course:

1. The students are expected to understand the application of quantum mechanics in some simple chemical systems such as hydrogen atom or hydrogen like ions.
2. The students will also learn chemical bonding in some simple molecular systems.
3. Students will also be able to understand the basics of various kinds of spectroscopic techniques and photochemistry.
4. In laboratory, they will learn to handle UV-vis spectroscopic and Colourimetry tool.

Discipline Specific Elective (DSE) [For 5th Semester]

Course: Analytical Methods in Chemistry

Course Code: CHE-HE-5026

On successful completion:

1. Students will have theoretical understanding about choice of various analytical techniques used for qualitative and quantitative characterization of samples.
2. Students will have theoretical understanding of Optical methods of analysis such as UV-Visible Spectrometry, Infrared Spectroscopy, Flame Atomic Absorption and Emission Spectrometry etc.
3. Students will also have idea of electroanalytical method, different Separation techniques, thermal methods of analysis, etc.
4. At the same time through the experiments students will gain hands on experience of the discussed techniques. This will enable students to take judicious decisions while analyzing different samples.

Course: Instrumental Methods of Chemical Analysis

Course code: CHE-HE-5066

After the completion of the course

1. Students shall be able to explain the theoretical basis of different analytical techniques, such as Molecular spectroscopy, separation techniques, elemental analysis etc.
2. Students will also be able to identify the experimental requirements and compare/analyze the data/results thereof.

Course Outcomes

B.Sc. 6th Semester (Honours)

Course: Inorganic Chemistry-IV

Course Code: CHE-HC-6016

By studying this course:

1. The students will be expected to learn about how ligand substitution and redox reactions take place

in coordination complexes.

2. Students will also learn about organometallic compounds, comprehend their bonding, stability, reactivity and uses.

3. They will be familiar with the variety of catalysts based on transition metals and their application in industry.
4. On successful completion, students in general will be able to appreciate the use of concepts like solubility product, common ion effect, p^H etc. in analysis of ions and how a clever design of reactions, it is possible to identify the components in a mixture.
5. With the experiments related to coordination compound synthesis, calculation of 10Dq, controlling factors etc. will make the students appreciate the concepts of theory in experiments.

Course: Organic Chemistry-V

Course Code: CHE-HC-6026

After completion of the course:

1. Students will be able to explain/describe basic principles of different spectroscopic techniques such as UV Spectroscopy, IR Spectroscopy, NMR Spectroscopy and Electron Spin Resonance (ESR) spectroscopy.
2. Students will also know the importance of those techniques in chemical/organic analysis.
3. Students shall be able to classify/identify/critically examine carbohydrates, polymers and dye materials.

Discipline Specific Elective (DSE) [For 6th Semester]

Course: Green Chemistry

Course code: CHE-HE-6016

In this course:

1. Apart from introducing learners to the principles of green chemistry, this course will make them conversant with applications of green chemistry to organic synthesis.
2. Students will also be prepared for taking up entry level jobs in the chemical industry. They also will have the option of studying further in the area.

Course: Research Methodology for Chemistry

Course Code: CHE-HE-6046

After completing this course:

1. Students will be given training on scientific literature review.
2. Students will be able to write scientific research paper.

3. Students should be able to construct a rational research proposal to generate fruitful output in terms of publications and patents in the field of chemical sciences.

Department of Computer Science
Goalpara College
Programme Outcome

Programme Name: **B.Sc in Computer Science**

Link to GU Syllabus:

1. Education Honours (CBCS):
2. EducationRegular (CBCS):
3. Education Major/General (Non-CBCS):

Programme Outcome:

- Apply fundamental principles and methods of Computer Science to a wide range of applications.
- Design, correctly implement and document solutions to significant computational problems.
- Impart an understanding of the basics of our discipline.
- Prepare for continued professional development.
- Develop proficiency in the practice of computing.

Rajib Sarma

Head

Department of Computer Science

Department of Computer Science
Goalpara College
Course Outcome (CBCS)

BSc Computer Science Regular

Semester I

COURSE: **PROBLEM SOLVING USING COMPUTER** COURSE CODE: **CSC-RC-1016**

After completion of the course

- Students will understand about the basic characteristics of computer
- Students will learn about the different applications of computer

Semester II

COURSE: **DATABASE MANAGEMENT SYSTEM** COURSE CODE: **CSC-RC-2016**

After completion of the course

- Students will understand fundamental concepts of database.
- Students will understand user requirements and frame it in data model.
- Students will be able to create, manipulate of data in databases.
- Ability to solve real world problems using appropriate set, function, and relational models.

Semester III

COURSE: **OPERATING SYSTEM** COURSE CODE: **CSC-RC-3016**

After completion of the course

- Students will learn about the basic components of an operating system and their role in implementations for general purpose, real-time and embedded applications.

Semester IV

COURSE: **COMPUTER SYSTEM ARCHITECTURE** COURSE CODE: **CSC-RC-4016**

After completion of the course

- Students will understand the basics of computer and its components
- Students will learn about software and hardware.

GEOGRAPHY COURSE OUTCOME

CBCS/Non-CBCS

PROGRAMME: B.A./B.SC. GEOGRAPHY

Objectives

Geography mainly concerns changes in spatial attributes from a temporal perspective. The Honours program in geography is tailored to meet the students' specific educational and professional goals in mind. It focuses on spatial studies, qualitative as well as quantitative, and emphasizes the human-environment relationship. During the first year of the program, the students are trained on advanced concepts of physical and human geography. The third-year allows them to concentrate on specific areas of the subject, on which they complete their field reports. After completing the course, the students will be amply prepared for professional careers in geography and allied disciplines like GIS and Remote Sensing. They will also be able to pursue M.A. /M.Sc. Course in Geography.

COURSE OUTCOME

1ST SEMESTER

Course: Geomorphology **Course Code: HC 1016**

- Develop an idea about geomorphology and different types of fundamental concepts.
- Explain different types of geomorphic processes like weathering and mass wasting and cycle of erosion.
- Understand the processes of erosion, deposition and resulting landforms.
- Acquire knowledge about slope forms and processes.
- Gain knowledge about topographical maps and apply this knowledge in ground surface.
- Identification of different types of rock and minerals

Course: Thematic Cartography **Course Code: HC 1026**

- Understand and prepare different kinds of maps.
- Recognize basic themes of map making.
- Development of observation skills.

Course: Physical Geography **Course Code: HG 101**

- The students will learn that the earth is unstable and it is undergoing constant changes due to dynamic earth's processes.
- The students will come to know about the meaning and scope of geomorphology, which a major branch of Physical Geography.
- After gaining knowledge based on the contents embodied in this paper, the students will be able to realize the importance of geomorphological knowledge as applied in various developmental activities executed on the land and over the earth's surface.

Course: Geography of Tourism **Course Code: GGY-HG 103**

- Learn Scope and Nature: Concepts and issues, tourism, recreation, and leisure inter-relations; Factors influencing tourism, Types of Tourism: Ecotourism, cultural tourism,

adventure tourism, medical tourism, pilgrimage, international, national.

- Use of information on factors (Historical, natural, socio-cultural, and economic; motivating factors for pilgrimages) to plan destination marketing; tourism products; niche tourism planning; Tourism impact assessment, Sustainable tourism, Information Technology, and Tourism, Tour operations planning, and guiding. • Increasing Global tourism; Tourism in India: Tourism infrastructure, access, planning for different budgets for case study sites Northeast India.

2nd SEMESTER

Course: Human Geography **Course Code: HC 2016**

- Gain knowledge about major themes of human geography.

- Develop an idea about space and society.
- Build an idea about population growth and distribution of population.
- Know about population –resource relationship.
- Know about diagrammatic data presentation like line, bar, and circle.
- Develop an idea about different types of thematic mapping techniques.

Course: Climatology and Biogeography **Course Code: HC 2026**

- Understand the elements of weather and climate, different atmospheric phenomena and climate change.
- Learn to associate climate with other environmental and human issues. Approaches to climate classification.
- To analyze the dynamics of the Earth's atmosphere and global climate. Assessing the role of man in global climate change.
- Prepare various climatic maps and charts and interpret them.
- Learn to use various meteorological instruments.
- Learn the interaction between the atmosphere and the earth's surface. Understand the importance of atmospheric pressure and winds.
- Understand how atmospheric moisture works.
- Learn to use various meteorological instruments.
- Gain knowledge about Indian daily weather reports.
- Students will develop a basic understanding of the introductory concepts in biogeography.
- The paper be very useful for students preparing for UGC NET-JRF / SLET exam and other competitive exams including civil services.

Course: Human Geography **Course Code: HG 203**

- Gain knowledge about major themes of human Geography.
- Acquire knowledge of the history and evolution of humans.
- Understand the approaches and processes of Human Geography as well as the diverse patterns of habitat and adaptations.
- Develop an idea about space and society

Course: Disaster Management **Course Code: GGY- HG 204**

- The students will be able to analyse the causes and management issues related to disasters taking place in students' own localities.
- The students will be able to differentiate the types of disasters, causes and their impact on environment and society along with various disaster management strategies and their applicability in different situations.

3rd SEMESTER

Course: Economic Geography **Course Code: GGY - HC - 3016**

- The paper will be useful for students in developing ideas on how geographical aspects organize economic space and will offer perspectives to students if they wish to pursue a research programme.
- The paper will be useful for students preparing for UGC NET/SLET exams and other competitive exams including the civil services.

Course: Geography of India with special reference to North-East India **Course Code: GGY - HC - 3026**

- The paper will be useful for students in developing understanding on Indian geography and its various dimensions.
- It will also be useful for students preparing for UGC NET/SLET examinations along with civil services and other competitive examinations.

Course: Quantitative Methods in Geography **Course Code: GGY - HC – 3036**

- Thorough understanding of the statistical methods and techniques used in geographical studies;
- Understanding of tabulation, analysis and interpretation of geographical data.

Course: River Basin Studies **Course Code: GGY-SE-3014**

- At the end of the course, the students will be able to learn use of a few instruments like rotameter, planimeter, Dumpy Level, etc.
- To learn the basics of morphometric analysis techniques.
- To acquaint with the field methods of river studies in a cross-section.

Course: Economic Geography **Course Code: GGY – RC/HG – 3016**

- This paper will be useful for the students in developing an understanding of how geographical factors organize economic space, and to acquire knowledge about spatial patterns of various economic activities on the earth.

Course: Cartographic Methods **Course Code: GGY-HG-3026**

- Understanding the importance of various cartographic techniques in geographical study General understanding of map type, map scale, and map content.
- An acquaintance of different cartographic techniques for the representation of various facets of physical and human geographic data of any area.

4th SEMESTER

Course: Environmental Geography and Disaster Management **Course Code: GGY - HC – 4016**

- The paper will be useful for students in developing ideas on environmental issues that

geographers usually address
● The paper will be useful for students preparing for UGC NET/SLET exams and other competitive exams including the civil services.

Course: Population and Settlement Geography Course Code: GGY - HC - 4026

- Gain knowledge of different aspects of population geography.
- Develop an idea about the concept of Migration.

- Build an idea about urban and rural settlements, and their relationship with the environment and also different theories related to settlement geography

Course: Remote Sensing Techniques and GIS Course Code: GGY - HC - 4036

● The paper remains useful for students in developing skills in spatial data analysis if they wish to pursue a research programme.
● The paper will be useful for students preparing for UGC NET/SLET exams and other competitive exams including the civil services.

Course: Advanced Statistical Techniques for Spatial Analysis **Course Code: GGY - SE - 4014**

● It provides general understanding of geographical data and application of various statistical measures for their meaningful analysis

● Acquiring basic knowledge about probability and normal distributions and their applications for sample data collection and analysis

● Understanding the patterns and processes associated with various geographical phenomena through the application of different statistical techniques.

Course: Surveying Techniques Course Code: GGY – SE-4024

● Understanding the importance of various surveying techniques in geographical study.

● General understanding of preparation of different types of plan and map.

● An acquaintance of different surveying techniques for representation of various objects of earth's surface.

Course: Regional Geography of India with special reference to N.E. India **Course Code GGY –HG-4016**

- The paper will be useful for students in developing an understanding of Indian geography and its various dimensions.
- It will also be useful for students preparing for UGC NET/SLET examinations along with civil services and other competitive examinations**.**

Course: Population and settlement Geography Course Code: GGY - HG - 4026

- Gain knowledge of different aspects of population geography.
- Develop an idea about the concept of Migration.

- Build an idea about urban and rural settlements, and their relationship with the environment and also different theories related to settlement geography

- The emphasis on regional geography of India and Assam including its physical aspects i.e. physiography, climate as well as other aspects of regional geography as given in details.
- Overall this paper is all about the knowledge of regional geography of local, regional and world level.

PROGRAMME OUTCOMES

GOALPARA COLLEGE

DEPARTMENT OF PHYSICS

PROGRAMME: B.SC. PHYSICS

Link to Syllabus:

1. CBSC (Honours) Syllabus: https://goalparacollege.ac.in/upload/dept_syllabus/1646634717.pdf
2. CBCS (Regular/Generic) Syllabus: https://goalparacollege.ac.in/upload/dept_syllabus/1646727003.pdf
3. Non-CBCS (Major/General) Syllabus: https://goalparacollege.ac.in/upload/dept_syllabus/1646635341.pdf

1. Knowledge and Understanding:

a. In Mathematical Physics, students get the opportunity to learn vectors, vector calculus, Differential Equations, Matrices, Tensor Analysis, and Complex Variables etc.

b. Students learn various facts of Electricity and Magnetism. They also learn the basics of transmission lines, principle of operation of electric motors, electric generator. A comprehensive review on Gauss's Law and its applications in determination of Electric field intensity in different electrical set up.

c. Students will gain adequate knowledge on laws of thermodynamics and its applications in Heat engine, refrigerator etc. They will also grasp the utility of second law in describing entropy of thermodynamic systems and its connection to evolution of universe.

d. Students will learn the basics of electronics, principle of operation of diodes, transistors etc. It will help in understanding the working of rectifiers used for AC-DC conversion, amplifiers etc.

e. Students get the opportunity to learn various computational techniques like C, C++, FORTRAN, and Python. They will also be made acquainted to software's like MATLAB, MATHEMATICA. However, because of time constraint it may not be possible to learn enough on every language or software's.

f. Students learn the evolution of different Atom Models discussed under Atomic Physics. The program will enable students to understand the physics of Hydrogen spectra, fine structure lines in spectroscopy and splitting of spectral lines in external fields. It has far reaching implications in understanding the composition of astrophysical objects of interest.

g. Students will learn the theories and models of Nuclear and Particle Physics. This knowledge will help in understanding the working of modern day detectors, counters.

h. The concept of Binding Energy will help in understanding the fundamentals of nuclear stability.

i. With the introduction of Statistical Physics, students will understand the physics of many particle

systems. The knowledge on classical and quantum statistics will describe the behavior of Bose Einstein's Condensate, Fermi pressure and the behavior of white dwarf star.

j. Students will learn geometrical optics, physical optics and holography to understand various optical phenomena and will understand the designing of optical instruments.

k. The physics of bodies moving at speed comparable to light is indeed very interesting and it conceptualize the understanding on different frame of reference. The students will learn Special Theory of Relativity and its applications.

2. Development of intellectual faculties:

a. Mathematics is the language of Physics. The course will promote logical and analytical thinking amongst students.

b. Students will eventually develop the art of relating the facts learned in different papers and this will inculcate constructive thinking and will develop problem solving capacity.

c. During the process of performing experiments, a systematic approach is required. This systematic study develops a sense of chronological approach towards a problem.

d. In performing experiments related to Electronics paper, students will acquire the skill of designing circuit and assembling components.

e. While learning various facts, students will develop a sense of visualization. It will help them to grasp the nature of subatomic particles and behaviour of different physical systems of interest.

f. Students will develop imaginative power and will also acquire the skill to estimate measurements or make legitimate guess in physics problems.

3. Practical Skills:

a. Students learn the basic measuring techniques of length using slide calipers, screw gauge, spherometer etc.

b. Students will get the exposure to certain experiments of electricity, thermal physics, mechanics, nuclear physics, electronics and so forth.

c. Students will learn how to handle analog and digital multimeters. They will experience the utility of different electronic instruments.

d. Students will get the opportunity to handle function generator and CRO (Cathode Ray Oscilloscope). By this process, they will learn to measure frequency, wavelength of a wave or signal.

e. Students are supposed to pursue a project on a novel topic. This fosters a sense of creativity amongst the students. Also, the students will get a basic feel of research. They will acquire some computational skill, writing skill and will develop physical insight on the problem.

f. Students will get hands-on training on the latest computational techniques like Python, Sci-Lab etc.

4. Communication and Other Skills:

a. Students are allowed to prepare a topic holistically and after that they are asked to present. This polishes their communication skills. In other words, the communication skill is developed.

b. While performing the project work, students are encouraged to participate in group discussion with the supervisor, other faculty members and some of the students. This will develop a confidence and art of speaking/delivery in public platform. Sometimes projects are carried out in group. By that process, they develop a team spirit, sportsmanship etc.

c. The course exposes the students to various facets of computer programming and other relevant diagnostic techniques that may have important applications in developing future technology.

5. Prospects of employment:

(a) After the successful completion of this course, a student becomes eligible to pursue higher studies such as MSc (Physics) in different reputed institution across the country.

(b) A student of BSc Physics can be absorbed as a science teacher in a school provided he/she fulfils other eligibility criteria.

(c) A student of BSc Physics may get the opportunity to pursue a course on Geophysics, Biophysics, Sound engineering and so forth.

(d) A student of BSc Physics may get employment in the fields of instrumentation, nuclear medicine, radiology etc.

(e) A student pursuing BSc in Physics may dream of getting placement as Scientists in reputed organization like ISRO, DRDO other research institutes like IUCAA, S.N. Bose institute, SINP, Kolkata, ASTEC, after completion of Ph.D and adequate research in respective fields.

(f) Students may undertake various training after completion of BSc and may get a scope to serve the country through civil services.

(g) Students will get ample opportunity to build a career in reputed Govt. owned enterprises like SAIL, GAIL, OIL, ONGC, and IOCL after completion of BSc.

(h) There are opportunities to get a placement in Central, Cooperative Banks as PO, Asst Branch Manager, and Client relationship officer after completion of BSc in Physics, which serves as eligibility criteria.

6. Ethics:

(a) In the process of project preparation students will be made aware of IP tools such as copyright. They will learn about plagiarism issues and will practice genuine techniques in preparing projects and other reports related to academics. This will develop an independent feel and bring out creativity amongst students.

(b) Students will understand the protocols of Laboratory work and learn discipline in performing their duties.

Head

Deptt.of Physic

Course Outcomes

B.Sc.1st Semester

Course: Mathematical Physics I **Course Code: PHY-HC-1016**

After the completion of the course-

1. Students will acquire adequate knowledge about Vector and its applications in various fields.
2. The course will enable the students to apply the knowledge of Differential Equations in different core papers to be learned in subsequent semesters.
3. At the end of the course, the students are expected to understand the importance of different coordinate systems i.e. Cartesian, spherical and cylindrical in studying Physics.
4. The course will enable students to pursue a career in Theoretical Physics in the future.

Couse: Mechanics **Course Code: PHY-HC-1026**

After the completion of the course, Students will be able to

1. Distinguish between inertial, non-inertial frames and physics associated with this reference frames.
2. Understand the Simple Harmonic Motion and the characteristics of such oscillating systems.
3. Grasp the principle of projectile motion and their applications in technological advancement.
4. Basics of special theory of relativity and will be able to understand relativistic phenomena such as time dilation, twin paradox, length contraction etc.

Couse: Mechanics **Course Code: PHY-HG-1016/PHY-RC-1016**

After the completion of the course, Students will be able to

1. Distinguish between inertial, non-inertial frames and physics associated with this reference frames.
2. Understand the Simple Harmonic Motion and the characteristics of such oscillating systems.
3. Grasp the principle of projectile motion and their applications in technological advancement
4. Basics of special theory of relativity and will be able to understand relativistic phenomena such as time dilation, twin paradox, length contraction etc.

Course Outcomes

B.Sc. 2nd Sem.

Course: Electricity and Magnetism **Course code: PHY-HC-2016**

Upon successful completion of this course it is intended that a student will be able to:

1. Understand the details of Electric and Magnetic Fields in matter.
2. Visualize the importance of Faraday's Laws of EM Induction in various applications such as transformer, ac generator etc.
3. Realize the concept of displacement current.
4. Apply knowledge of Kirchhoff's law to understand the operation of various electrical circuits used in modern devices.
5. Understand the functioning of Ballistic galvanometer.

Course: Waves and Optics **Course Code: PHY-HC-2026**

After the completion of the course, Students will be able to:

1. Understand the applications of superposition principle and will be able to see the physical origin of

Beats.

2. Grasp the physics of musical instruments.
3. Gain knowledge on various Interferometers and understand EM phenomena that occur due to interference and diffraction of light.

Course: Electricity and Magnetism **Course code: PHY-HG-2016/PHY-RC-2016**

Upon successful completion of this course it is intended that a student will be able to:

1. Basics of vectors.
2. Understand the details of Electric and Magnetic Fields in matter.
3. Visualize the importance of Faraday's Laws of EM Induction in various applications such as transformer, ac generator etc.
4. Realize the concept of displacement current.
5. Apply knowledge of Kirchhoff's law to understand the operation of various electrical circuits used in modern devices.

Course Outcomes

B.Sc. 3rd Semester

Course: Mathematical Physics II **Course Code: PHY-HC-3016**

After the completion of the course, Students will be able to

1. Solve second order ODE using Power series and Frobenius method.
2. Understand the utility of Legendre Polynomial, Hermite polynomial, Laguerre's polynomial and their significance in Electrodynamics, solution of Schrodinger equation.
3. Visualize the mathematical origin of complex wave pattern in signal processing.
4. Do Fourier analysis to understand the complicated periodic function.

Course: Thermal Physics **Course Code: PHY-HC-3026**

After the completion of the course, Students will be able to

1. Understand the physics of Thermodynamic systems, their phase behavior, conversion mechanism of heat into work.
2. Grasp the concept of reversible and irreversible processes, First law in different thermodynamic processes.
3. Gain knowledge on various thermodynamic potentials and the relations between them.
4. Understand the phase diagram of thermodynamic systems and to assess the order of phase transition with the use of free energy.

5. Develop skill to identify and describe various thermodynamic variables.
6. Figure out the deviation of real gas from ideal gas.

Course: Digital Systems and Applications Course Code: PHY-HC-3036

After the completion of the course, Students will be able to

1. Students will be able to apply the knowledge of Boolean algebra in designing digital circuits.
2. Students will be able to analyze combinational logic circuits.
3. Students will be able to analyze and design sequential logic circuits.
4. Students will gain knowledge on different IC's and their utility indesigning electrical circuits used in modern accessories.

Course: Computational Physics Skills Course Code: PHY-SE-3024

After the completion of the course, Students will be able to

1. Importance of computers in Physics.
2. Students will get introduction to various OS, Linux OS such as RedHat, Ubuntu, Scientific Linux, Usage of Basic linux commands.
3. Will be able to construct Algorithms and Flowcharts of simple problems.
4. Will be able to use different logics such as Sequential, Selection, Repetition logic in programms.

Course: Thermal Physics & Statistical Mechanics Course Code: PHY-HG-3016/PHY-RC-3016

After the completion of the course, Students will be able to

1. Understand the physics of Thermodynamic systems, their phase behavior, conversion mechanism of heat into work.
2. Grasp the concept of reversible and irreversible processes, First law in different thermodynamic processes.
3. Gain knowledge on various thermodynamic potentials and the relations between them.
4. Understand the phase diagram of thermodynamic systems and to assess the order of phase transition with the use of free energy.
5. Develop skill to identify and describe various thermodynamic variables.
6. Understand Phase space, Macrostate and Microstate etc.

Course Outcomes

B.Sc. 4th Semester

Course: Mathematical Physics III **Course Code: PHY-HC-4016**

After the completion of the course, Students will be able to

1. Understand the Mathematical tools needed to address Special and General Theory of Relativity; learn Particle Physics in the future.
2. Apply the knowledge of Fourier and Laplace's Transforms in solving Differential Equations.
3. Grasp the utility of contra variant and co-variant tensors.

Course: Elements of Modern Physics **Course Code: PHY-HC-4026**

Upon successful completion of this course it is intended that a student will be able to:

1. Derive the Planck's Radiation Formula with the understanding of discrete exchange of energy between matter and radiation, concept of probability. This will be useful to formulate Wien's Displacement law that can help in measurement of surface temperature of stellar objects.
2. Understand the application of Quantum idea in measuring the power radiated off a stellar body.
3. Distinguish the characteristics of Quantum mechanical systems from the classical ones.
4. Acquire adequate knowledge on Binding Energy curve which can be helpful in explaining several nuclear phenomena and importance of magic number.
5. Learn the physics of He-Ne and Ruby Laser and its vast applications in the industrial and medical sectors.

Course: Analog Systems & Applications **Course Code: PHY-HC-4036**

After the completion of the course, Students will be able to

1. Understand the working of PN junction diodes, photo diodes, zener diodes, solar cell etc. as applications of Semiconductor Physics.
2. Working and principle of bipolar junction transistor.
3. Gain knowledge on amplifier circuit and the mechanism of feedback in such amplifiers.
4. Understand the utility of OPAMP and oscillator circuits in electronic devices.

Course: Research & Technical Writing **Course Code: HY-SE-4024**

After the completion of the course, Students will be able to

1. Understand structure and components of scientific reports.

2. Use of latex for technical writings.
3. Use of different graph plotting and data analysis tool such as Origin, Microsoft Excel etc.
4. Fitting of non-linear, linear, polynomial equations.

Course Outcomes

B.Sc. 5th Semester

Course : Quantum Mechanics & Applications **Course Code :PHY-HC-5016**

After the completion of the course, Students will be able to

1. Understand the fundamentals of Quantum Mechanics and the developed framework to understand the behavior of atoms and subatomic particles.
2. Grasp the concept of free particle, stationary and non-stationary states, the method for solving Schrodinger equation in time dependent and time independent situations.
3. Learn the concept of spatial quantization, spinning electron hypothesis and its applications in spectroscopy.
4. Learn about the physical origin of fine structure lines, its intensity and various selection rules of Quantum mechanical origin.
5. Analyze the splitting of spectral lines in electric and magnetic fields : Stark and Zeeman effect.

Course: Solid State Physics **Subject Code: PHY-HC-5026**

After the completion of the course

1. Students will learn about various types of crystalline solids, their packing fraction, interatomic force and hardness and softness of solids.
2. Students will learn about the behavior of specific heat of solids at low temperature.
3. Students will understand the relation between thermal and electrical conductivity of solids.
4. The course will enable students to learn about cooper pairing and its consequence, critical temperature and critical magnetic field and its significance.
5. Students will also learn about Hall effect and its applications in detecting P type, N type SCs and in measuring conductivity.

Course: Physics of Devices and Instruments Course Code: PHY-HE-5046/ PHY-RE-5046

After completion

1. students will be able to gain knowledge on advanced electronics devices such as UJT, JFET, MOSFET, CMOS etc**.**,
2. Construction of regulated power supply.
3. Detailed process along with the science behind the IC fabrication technique.
4. Digital Data Communication systems.
5. Standards along with the understanding of communication systems**.**

Course: Nuclear and Particle Physics Course Code: PHY-HE-5056/ PHY-RE-5056

Upon completion of this course,

1. students will have the understanding of the sub atomic particles and their properties.
2. Students will gain knowledge about the different nuclear techniques and their applications in different branches of Physics and societal application.
3. The course will develop problem based skills and the acquire knowledge can be applied in the areas of nuclear, medical, archeology, geology and other interdisciplinary fields of Physics and Chemistry.

Course Outcomes

B.Sc. 6th Semester

Subject: Electromagnetic Theory Subject Code: PHY-HC-6016

Upon Completion of the course students will be able to-

1. Evaluate EM energy density and quantify rate of energy flow through a surface.
2. Gain knowledge on Poynting Vector,formulate energy conservation principle in the light of Poynting Theorem.
3. Students will understand the propagation of EM waves in homogenous isotropic media.
4. Learn about the boundary conditions operative at the interface. Determination of Reflection,

Transmission coefficients and Fresnel's formula.

Subject: Statistical Mechanics **Subject Code: PHY-HC-6026**

Upon Completion of the course students will be able to-

1. Understand the application of Statistical Mechanics in addressing various problems of Astrophysics, Plasma Physics also in Chemistry and Life sciences.
2. Describe the behavior of many body systems such as a container filled with gas or a metallic sample with millions of electrons. It can be accomplished with the utility of the Classical and Quantum Statistics.
3. Utilize Wien's Displacement law for measurement of surface temperature of celestial objects, Stefan's law for measurement of radiated power from an object.
4. Grasp the failure of Classical Rayleigh Jean's and Wien's law in describing the Black Body radiation. Understand the concept of Ultra violet Catastrophe.

Course: Communication Electronics **Course Code: PHY-HE-6016/PHY-RE-6016**

Upon completion of this course,

1. Students will have the concepts of electronics in communication.
2. Students will have knowledge on details of communication techniques based on Analog Modulation, Analog and digital Pulse Modulation including PAM, PWM, PPM, ASK, PSK, FSK.
3. Students will get overview of communication and Navigation systems such as GPS and mobile telephony system.

Course: Astronomy and Astrophysics **Course Code: PHY-HE-6046/PHY-RE-6046**

Upon completion of this course,

1. students will be able to understanding the origin and evolution of the Universe.
2. The course will give a comprehensive introduction on the measurement of basic astronomical parameters such as astronomical scales, luminosity and astronomical quantities.
3. The course will give an overview on key developments in observational astrophysics.
4. Students will have the idea of the instruments implemented for astronomical observation, the formation of planetary system and its evolution with time, the physical properties of Sun and the components of the solar system; and stellar and interstellar components of our Milky Way galaxy.
5. Students will have the understanding of the origin and evolution of galaxies, presence of dark matter and large scale structures of the Universe

PROGRAMME OUTCOMES

GOALPARA COLLEGE

DEPARTMENT OF ZOOLOGY

PROGRAMME: B.Sc. ZOOLOGY

Link to Syllabus:

1. CBSC (Honours) Syllabus: https://goalparacollege.ac.in/upload/dept_syllabus/1646634717.pdf
2. CBCS (Regular/Generic) Syllabus: https://goalparacollege.ac.in/upload/dept_syllabus/1646634750.pdf
3. Non-CBCS (Major/General) Syllabus: https://goalparacollege.ac.in/upload/dept_syllabus/1646635341.pdf

Knowledge and Understanding:

a. In invertebrate zoology, students get the opportunity to learn the diversity of invertebrate and vertebrate organisms from protists to mammals.

b. Students learn the basic scheme of classification of animals along with general characteristics of each group.

c. Students will gain adequate knowledge on the anatomy and physiology of a representative individual of each group.

d. Students will learn the basics of ecology, ecosystem, evolution and the role of animals in the ecosystem.

e. Students get the opportunity to learn the microscopic world in the form of single cell and intracellular organelles. They will also learn various cellular activities starting from cellular respiration to cell signalling.

f. Students learn the fundamentals of biomolecules, biochemistry and molecular biology.

g. Students will get the knowledge of genetic material and the transmission generation after generation. This will help them in understanding the transmission of genetic disorder and evolution among organisms.

h. The concept of Binding Energy will help in understanding the fundamentals of nuclear stability.

i. Students will learn the foetal, embryonic and post embryonic development among the organisms.

j. The student will get the basic idea of biostatistics and bioinformatics that will help them in analysis of various biological and biotechnological events and activities.

Development of intellectual faculties:

a. Students will gain knowledge and skill in the fundamentals of animal sciences. They will be able to understand and analyse complex interactions among various living organisms.

b. The students will be able to apply the knowledge of internal structure of cells and the cellular activities in controlling various metabolic functions of organisms.

c. The students will understand the complex processes of evolution and animal behaviour.

d. The students will be able to understand the necessity and importance of pollution control and conservation of nature and natural resources.

e. The students will acquire the knowledge of small scale industries like sericulture, fish farming, ornamental fish culture etc.

f. The students will understand the concepts of heredity, genetics, evolution and its importance in human health and development.

g. They will be able to apply the knowledge and understanding of zoology in their own life and the animals around.

h. Finally they will develop a sense of sympathy, empathy, love and respect towards the other individuals.

Practical Skills:

a. Students learn the plotting of data and preparation of different types of curves and calculation of different types of indices.

b. Students will learn the calculation of water quality parameters and identification of aquatic organisms.

c. Students will get exposure to different species of animals through field visits to several conservation sites.

d. Students will get the opportunity to study different animals and their body parts through museum specimens, temporary and permanent slides.

e. Students will learn several techniques of detection and estimation of biomolecules.

f. Students will get hands-on training on the latest computational bioinformatics tools and techniques.

4. Communication and Other Skills:

a. Students are allowed to prepare topics from their syllabus and present before both teachers and classmates to polish their presentation and communication skills.

b. While performing the project work, students are encouraged to participate in group discussion with the supervisor and classmates. This develops a confidence and art of speaking/delivery on a public platform. Sometimes projects are carried out in groups. by that process, they develop a team spirit, sportsmanship etc.

c. The course exposes the students to various facets of computer programming and other relevant diagnostic techniques that may have important applications in developing future technology.

5. Prospects of employment:

a. After the successful completion of this course, a student becomes eligible to pursue higher studies such as M.Sc. (Zoology, Life Science, Microbiology, Ecology, Biotechnology and several other allied subjects) in different reputed institutions across the country.

b. A student of B.Sc. Zoology can be absorbed as a science teacher in a school provided he/she fulfils other eligibility criteria.

c. A student of B.Sc. Zoology may get the opportunity to pursue a course on Biochemistry, Biophysics, Bioinformatics, Genetic engineering and so forth.

d. A student of BSc Zoology may get employment in the fields of instrumentation, nuclear medicine, radiology etc.

e. A student pursuing BSc in Zoology may dream of getting placement as a scientist in a reputed organisation like DBT, DST, ZSI, ISRO, DRDO other research institutes like IASST, IUCN, ASTEC, after completion of Ph. D and adequate research in respective fields.

f. Students may undertake various training after completion of B.Sc. and may get a scope to serve the country through civil services.

g. Students will get ample opportunity to build a career in reputed Govt. owned enterprises like OIL, ONGC, and IOCL after completion of B.Sc.

h. There are opportunities to get a placement in Central, Cooperative Banks as PO, Asst Branch Manager, and Client relationship officer after completion of B.Sc. in Zoology, which serves as eligibility criteria.

6. Ethics:

a. In the process of project preparation students will be made aware of IP tools such as copyright. They will learn about plagiarism issues and will practice genuine techniques in preparing projects and other reports related to academics. This will develop an independent feel and bring out creativity among them.

b. Students will understand the protocols of Laboratory work and learn discipline in performing their duties.

Course Outcomes

B.Sc.1st Semester

Course: NON-CHORDATES I **Course Code: ZOO-HC-1016**

About the course

This provides a detailed understanding of non-chordates with classification.

Learning Outcomes

After the completion of the course-

1. Students will be familiar with the non-chordates up to annelida that surround us.
2. The course will enable the students to understand the process of evolution (unicellular cells to complex multicellular organisms).
3. At the end of the course, the students are expected to be able to identify the invertebrates and classify them up to the class level with the basis of systematic.
4. The course will enable students to understand the basis of life processes in the selected species of non-chordates and recognize the economically important invertebrate fauna.

Course: PRINCIPLES OF ECOLOGY **Course Code: ZOO-HC-1026**

About the course

This course will take students on a journey through the physical workings of the Earth, the interactions between species and their environments. The course highlights some of the important aspects *viz*. growth and survival of populations and communities in different habitats, energy flow in the ecosystems, interactions between the communities, exclusion of niches and consequences of changing the environment on biodiversity.

Learning outcomes

After successfully completing this course, the students will be able to:

1. Know the evolutionary and functional basis of animal ecology.
2. Understand what makes the scientific study of animal ecology a crucial and exciting endeavour.
3. Engage in field-based research activities to understand well the theoretical aspects taught besides learning techniques for gathering data in the field.
4. Analyse a biological problem, derive testable hypotheses and then design experiments and put the tests into practice.
5. Solve the environmental problems involving interaction of humans and natural systems at local or global level.
6. Understand, anticipate, analyse and evaluate natural resource issues and act on a lifestyle that conserves nature.
7. Understand and appreciate the diversity of ecosystems and apply beyond the syllabi to understand the local lifestyle and problems of the community.
8. Link the intricacies of food chains, food webs and link it with human life for its betterment and for non-exploitation of the biotic and abiotic components.
9. Develop leadership skills among them to promote betterment of the environment.

Course: ANIMAL DIVERSITY **Course Code: ZOO-HG-1016/ZOO-RC-1016**

About the course

The course is a walk for the Bachelor's entrant through the amazing diversity of living forms from simple to complex one. It enlightens how each group of organisms arose and how they establish themselves in the environment with their special characteristics. It also deals with the differences and similarities between organisms on the basis of their morphology and anatomy which led to their grouping into taxa and clades.

Learning outcomes

After successfully completing this course, the students will be able to:

1. Develop understanding on the diversity of life with regard to protists, non-chordates and chordates.
2. Group animals on the basis of their morphological characteristics/ structures and to understand the differences and similarities in the various aspects of classification.

3. Develop critical understanding of how animals changed from a primitive cell to a collection of simple cells to form a complex body plan.
4. Examine the diversity and evolutionary history of a taxon through the construction of a basic phylogenetic/ cladistics tree.
5. Understand how morphological change due to change in the environment helps drive evolution over a long period of time.
6. Understand the animal diversity both vertebrate and invertebrate around us.
7. Understand the underlying principles of classification of animals.
8. Understand the terminology needed in classification & classify invertebrates and be able to understand various physiological processes and evolutionary changes in each group of organisms.

Course Outcomes

B.Sc. Semester II

Course: NON-CHORDATES II **Course code: ZOO-HC-2016**

About the course

This will provide understanding of non-chordates.

Learning Outcomes

Upon successful completion of this course it is intended that a student will be able to:

1. Understand the diversity and classification and functional aspects of different systems of phylum Annelida, Arthropoda, Mollusca and Echinodermata.
2. Describe the social life and economic importance of insects.
3. Understand the physiology of pearl formation and pearl oyster formation.
4. Describe the advanced characteristic features of cephalopods and molluscs.
5. Ascertain resemblance and evolutionary significance of larval forms of echinoderms.

Course: CELL BIOLOGY **Course Code: ZOO-HC-2026**

About the course

The course provides a detailed insight into basic concepts of cellular structure and function. It also gives an account of the complex regulatory mechanisms that control cell function.

Learning outcomes

After successful completion of this course, the students will be able to:

1. Understand the functioning of nucleus and extra nuclear organelles and understand the intricate cellular mechanisms involved.
2. Understand the structure of cells and cell organelles.

1. Describe the composition and comparison of prokaryotic and eukaryotic cells.
2. Understand the structure and functions of chromosomes; mitotic and meiotic cell divisions and their significance.
3. Explain the cell cycle, cell signalling and their regulation.

Course: COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES

Course code: ZOO-HG-2016/ZOO-RC-2016

About the course

The course makes a detailed comparison of the anatomy of the different taxa of vertebrates.

Learning outcomes

Upon successful completion of this course it is intended that a student will be able to:

1. Get ample knowledge about the comparative structures of heart, aortic arches, kidney, balancing organ, hearing organ, respiratory organs, brain of different animals.
2. Gain knowledge of functional anatomy of the organ system.
3. Understand the evolution and changes that occur in each organ system of organisms according to their need and environment.
4. Understand the mechanism of pre and post embryonic development of mammals and their control system

Course Outcomes

B.Sc.3rd Semester

Course: DIVERSITY OF CHORDATA **Course Code: ZOO-HC-3016**

About the course

This provide detailed understanding of form, structure and habitats of chordates.

Learning outcomes

After the completion of the course, Students will be able to

1. Describe the diversity in form, structure and habits of chordates.
2. Explain general characteristics and classification of different classes of vertebrates.
3. Get the knowledge on ecology of some important fishes, amphibians, reptiles, birds and mammals.
4. Discuss some and very important phenomena in Chordates.
5. Understand the origin, evolution and distribution of the organisms in the different parts of the earth.

Course: ANIMAL PHYSIOLOGY **Code: ZOO-HC-3026**

About the course

The course offers insight into the physiology of chordates while giving an account of their anatomy. This course also explores vertebrate morphology with the aims of understanding major events in the history of vertebrate evolution and integrating the morphology of vertebrates with their ecology, behaviour and physiological adaptation in diverse habitats.

Learning outcomes

After successfully completing this course, the students will be able to:

1. Understand how cells, tissues, and organisms function at different levels.
2. Develop an understanding of the related disciplines, such as cell biology, neurophysiology, pharmacology, biochemistry etc.

3. Understand the entire animal's functions of the body. It includes Tissues. Bone, Muscle, Nerve etc in which all structure, function, process and control are studied.
4. The knowledge of neuromuscular coordination and the mechanism of osmoregulation in animals and the endocrine system and their function.
5. Understand the histology of male and female reproductive system, menstrual cycle and the role of contraceptives in population control.
6. Apply the knowledge to lead a healthy lifestyle.

Course: FUNDAMENTALS OF BIOCHEMISTRY Course Code: ZOO-HC-3036

About the course

The course provides an introduction to the structure of biomolecules with emphasis on the techniques used for structure determination and analysis. The course covers basic aspects of sample preparation for analysis and aims to enlighten the students how structural information can be utilised for better understanding of biological processes.

Learning outcomes

After successfully completing this course, the students will be able to:

- Understand about the importance and scope of biochemistry.
- Understand the structure and biological significance of carbohydrates, amino acids, proteins, lipids and nucleic acids.
- Understand the structure and function of immunoglobulins.
- Understand the concept of enzyme, its mechanism of action and regulation.
- Learn the preparation of models of peptides and nucleotides.
- Learn biochemical tests for amino acids, carbohydrates, proteins and nucleic acids.
- Learn measurement of enzyme activity and its kinetics.

Course: Ornamental Fish & Fisheries Course Code: ZOO-SE-3014

About the course

This course provides an introduction to ornamental fish diversity in NE India.

Learning outcomes

After the completion of the course, Students will be able to

1. Described the ornamental fish and their diversity in NE India.
2. Understand the various type's aquatic plants necessary for aquaculture practices.
3. Understand the physiology and reproductive mechanisms of ornamental fishes.
4. Understand the modern techniques and methods of aquarium preparation and maintenance.
5. Get the knowledge of ornamental fish breeding which is a highly professional and attractive avenue for youth.

Course: PHYSIOLOGY AND BIOCHEMISTRY

Course Code: ZOO-HG-3016/ZOO-RC-3016

About the course

This course provides an understanding of physiological and biochemical processes.

Learning outcomes

After the completion of the course, Students will be able to:

1. Understand the entire animal's functions of the body. It includes Digestion, Excretion, Respiration, Cardiovascular, Reproductive and Endocrine etc in which all structure, function, process and control are studied.
2. Explain various aspects of physiological activities of animals with special reference to humans.
3. Explain the various mechanisms of carbohydrate, protein, lipid metabolism and enzyme action.
4. Explain the basic principles of biochemistry and bioenergetics useful for biological studies for illustrating different structures, function and metabolism.

Course Outcomes

B.Sc.4th Semester

Course: COMPARATIVE ANATOMY OF VERTEBRATES

Course Code: ZOO-HC-4016

About the course

The course makes a detailed comparison of the anatomy of the different taxa of vertebrates. It also highlights how in the taxonomic hierarchy, there is an increase in the complexity of structure and function. The course thus gives an overview of the intricate life processes and adaptive radiations in vertebrates.

Learning outcomes

After successfully completing this course, the students will be able to

1. Develop an understanding of the characters used to classify besides being able to differentiate the organisms belonging to different taxa.
2. Realise that very similar physiological mechanisms are used in diverse organisms.
3. Get ample knowledge about the comparative account of Integumentary system , Skeletal system,

Digestive system, Respiratory system, Circulatory system, Urinogenital system, Nervous system,

Sense Organ, aortic arches, kidney, balancing organ, hearing organ, respiratory organs, brain of different animals.

4. Gain knowledge of functional anatomy of the organ system.
5. Understand the evolution and changes that occur in each organ system of organisms according to their need and environment.
6. Apply the knowledge of self to lead a healthy lifestyle.
7. Undertake research in any aspect of animal physiology in future.

Course: ANIMAL PHYSIOLOGY **Code: ZOO-HC-4026**

About the course

This will provide an understanding of physiological processes.

Learning outcomes

Up on successful completion of this course it is intended that a student will be able to:

1. Understand the basic functions of the body with reference to humans. It includes Digestion, Excretion, Respiration, Cardiovascular, etc in which all structure, function, process and control are studied.
2. Explain various aspects of physiological activities of animals with special reference to human.
3. Understand the details of blood composition, blood corpuscles type structure function, blood groups, blood coagulation etc.
4. Students gain fundamental knowledge of the physiology of homeostasis.

Course: BIOCHEMISTRY OF METABOLIC PROCESSES

Course Code: ZOO-HC-4036

About the course

This course provides an introduction of various metabolic processes & principles of biochemistry.

Learning outcomes

After the completion of the course, Students will be able to

1. Explain the various mechanisms of carbohydrate, protein, lipid metabolism.
2. Explain the basic principles of biochemistry and bioenergetics useful for biological studies for illustrating different structures, function and metabolism.
3. Understand the interactions and interdependence of physiological and biochemical processes.

4. Explain various biochemical pathways involved in metabolic processes.

Course: NON-MULBERRY SERICULTURE **Course Code: ZOO-SE-4024**

About the course

This course provides an understanding of taxonomy and systematics of different species of silkworms as well as physiology, anatomy and rearing of different non-mulberry silk worms.

Learning outcomes

After the completion of the course, Students will be able to

1. Describe Taxonomy and Systematic of different species of silkworms found in NE India.
2. Understand the physiology, anatomy and rearing of different Non-mulberry silk worms.
3. Get the knowledge of food plants of Eri and Muga silk worms.
4. Know about the culture methods of Non mulberry silk
5. Describe the diseases and pests of Eri and Muga silk worms.
6. Acquire the knowledge of quality of silk, silk gland and marketing strategies of silk through visit to various sericulture Govt. /Private Farm/ Centres.

Course Outcomes

B.Sc. 5thSemester

Course: MOLECULAR BIOLOGY **Course Code: ZOO-HC-5016**

About the course

The course provides an insight into the life processes at the molecular levels. Other important aspects include DNA and molecular genetics including gene cloning, sequencing and gene mapping in addition to the powerful techniques that revolutionised the pharmaceutical, health and agricultural industries.

Learning outcomes

After successfully completing this course, the students will be able to

1. Develop an understanding of concepts, mechanisms and evolutionary significance and relevance of molecular biology in the current scenario.
2. Get well versed in recombinant DNA technology which holds application in biomedical & genomic science, agriculture, environment management, etc. Therefore, a fundamental understanding of Molecular Biology will help in career building in all these fields.
3. Apply their knowledge in problem solving and future course of their career development in higher education and research.

4. Get new avenues of joining research in related areas such as therapeutic strategies or related opportunities in industry.
5. Understand the fundamentals of micro-molecular structures of cells like DNA, RNA, and Proteins etc.
6. Grasp the concept of molecular mechanisms like replication, transcription and translation both in prokaryotic and eukaryotic cells.
7. Learn the concept of post transcriptional and post translational modification for maturation of the end product.
8. Learn about the DNA repair mechanism and the regulation of gene expression.

Course: PRINCIPLES OF GENETICS **Subject Code: ZOO-HC-5026**

About the course

The course is designed to revise basic concepts of Genetics and then move on to advanced concepts. Some key aspects include the mechanism of inheritance, gene structure and function, sex chromosomal and autosomal anomalies, aspects of human genetics, recombination in bacteria and viruses, transposable genetic elements etc. will be covered.

Learning outcomes

After successfully completing this course, the students will be able to:

1. Learn & Apply the principles of Mendelian inheritance.
2. Understand the cause and effect of alterations in chromosome number and structure.
3. Students will learn about the chromosomal interactions like linkage, crossing over, recombination and chromosomal mapping.
4. Students will understand the different types of genetic mutation, their causes and transmission.
5. The course will enable students to learn about types of inheritance of genetic information generation after generation.
6. Relate the conventional and molecular methods for gene detection of gene mutation.
7. Discuss and analyse the epigenetic modifications and imprinting and its role in diseases.
8. Get new avenues of joining research in related areas such as genetic engineering of cells, cloning, genetic disorders, human fertility programme, genotoxicity, etc

Course: COMPUTATIONAL BIOLOGY and BIOSTATISTICS

Course Code: ZOO-HE-5016

About the course

The course is aimed at introducing the application of bioinformatics and statistics in biology. The course gives an insight into the key concepts and methods used in bioinformatics; and computer storage, retrieval, analysis, visualisation and distribution of information data related to biological macromolecules like DNA, RNA and proteins. It provides a foundation on statistical methods to enable students to compute and interpret basic statistical parameters. As an interdisciplinary field it integrates biology, computer science, chemistry and statistics together with sequence analysis, structure analysis and functional analysis of biological data.

Learning outcomes

After successfully completing this course, the students will be able to:

1. Know the theory behind fundamental bioinformatics analysis methods.
2. Be familiar with widely used bioinformatics databases.
3. Know basic concepts of probability and statistics.
4. Describe statistical methods and probability distributions relevant for molecular biology data.
5. Know the applications and limitations of different bioinformatics and statistical methods.
6. Perform and interpret bioinformatics and statistical analyses with real molecular biology data.
7. Acquire knowledge of various databases of proteins, nucleic acids. Primary, secondary and composite databases. BLAST, FASTA, DOT PLOT
8. Make phylogenetic predictions or prediction of structure of proteins and nucleic acids
9. Develop understanding in Primer designing

Course: ENDOCRINOLOGY **Course Code: ZOO-HE-5036**

About the course

The course envisages information on the endocrine system with emphasis on the structure of hypothalamus and anterior pituitary. The associated hormones and the related disorders will be explained.

Learning outcomes

1. Students will understand neurohormones and neurosecretions. Students will have the understanding of the history of endocrinology, classification and characteristics of different endocrine glands.
2. Learn about hypothalamic and hypophysial axis.
3. Students will gain knowledge about the structure, secretion and functions of pineal gland, hypothalamus, and pituitary gland & understand about different endocrine glands and their disorders.
4. Students will gain knowledge about the structure, secretion, functions and disorders of several other peripheral glands and about hormone action.

5. The students will learn the genetic control and regulation of hormone action at the cellular level.

Course: APPLIED ZOOLOGY **Course Code: ZOO-RE-5026**

About the course

The course is unique in highlighting the commercial and industrial significance/value of animals. It discusses the economic and medical importance of some insects associated with human life.

Learning outcomes

After successfully completing this course, the students will be able to:

1. Students will have an understanding of the different types of interaction among the host and parasites.

2. Students will gain knowledge about the mode of transmission, prevention and control of different diseases caused by bacteria, protozoa, helminthes.

3. Students will gain knowledge about the economic and medical importance of some insects associated with human life.

4. The students will learn basic techniques of animal husbandry, poultry farming and fish technology.

Course Outcomes

B.Sc. 6thSemester

Subject: DEVELOPMENTAL BIOLOGY **Subject Code: ZOO-HC-6016**

About the course

The course explains the sequence of events starting with a single cell to the production of a very complex organism. The course not only describes how embryos develop (embryology), but also highlights how the processes of development are brought about by changing individual cells into specialised cells with specific functions (the cellular level), and how genes within the genome of the organism drive and guide these changes (the molecular level). It also deals with a comparative account of development in some select groups of animals.

Learning outcomes

After successfully completing the course, the students will be able to:

1. Get basic concepts of development, pattern formation, growth, differentiation and gene expression.

2. Gain knowledge of early embryonic development, late embryonic and post embryonic developmental changes in different organisms & develop critical understanding how a single-celled fertilised egg becomes an embryo and then a fully formed adult by going through three important processes of cell division, cell differentiation and morphogenesis.
3. Understand how developmental processes and gene functions within a particular tissue or organism can provide insight into functions of other tissues and organisms.
4. Realise that very similar mechanisms are used in very diverse organisms; and development is controlled through molecular changes resulting in variation in the expression and function of gene networks.
5. Gain knowledge about teratogenic agents and their effects on embryonic development
6. Acquire ample knowledge about *In vitro* fertilisation, Stem cell culture and amniocentesis.

Subject: EVOLUTIONARY BIOLOGY **Subject Code: ZOO-HC-6026**

About the course

This focuses on understanding the origin of life with reference to fundamental theories of evolution & examining the evolutionary history of the taxa based on developmental affinities.

Learning outcomes

Upon Completion of the course students will be able to-

1. Understand the origin of life, Chemogeny, Biogeny, Origin of photosynthesis etc.
2. Describe the fundamental theories of evolution like Lamarckism, Darwinism, Neo-Darwinism.
3. Aware of the various evidence of evolution and the roles of evidence in evolution and the product of evolution.
4. Get the knowledge of molecular analysis of human origin and evolution, construction and interpretation of phylogenetic tree.

Course: BIOLOGY OF INSECTA **Course Code: ZOO-HE-6016**

About the course

This course provides an introduction to classification & distribution of insects.

Learning outcomes

Upon completion of this course,

1. Students will learn the general characters, classification and distribution of insects.
2. Students will have knowledge of general morphology, physiology and social behaviour of insects.
3. Students will get an overview of insect plant interaction and their co-evolution.

4. The students will learn about the Insects as mechanical and Biological vectors with special reference to housefly and mosquitoes.

Course: DISSERTATION **Course Code: ZOO-HE-6056**

Learning outcomes

Upon completion of this course,

1. Students will be able to do small scale research work by themselves.
2. The course will give a comprehensive introduction to data collection, data analysis and presentation in the form of a report or research paper.
3. The course will give an overview on field survey and scientific data collection.
4. Students will have the idea of performing time bound scientific research work and writing reports or dissertations.

Course: Wildlife Photography and Ecotourism **Course Code: ZOO-SE-6014**

About the course

This provides detailed understandings of various tools and techniques of photography and videography.

Learning outcomes

Upon completion of this course,

1. Students will be able to handle various tools and techniques of photography and videography.
2. The students will get a practical knowledge of photography through field visits to different places like Wetlands, Wildlife sanctuaries, National parks, Industrial sites.
3. It will give an overview on scope and Management of Eco-tourism & hospitality among students.
4. Students will have the practical knowledge of ecotourism through field visits to Wildlife sanctuaries, Eco-park, Historical and religious places, Cultural museum etc.

Course: INSECT, VECTORS AND DISEASES **Course Code: ZOO-RE-6024**

About the course

This course offers an idea of insect vectors, their classification and major diseases caused by them.

Learning outcomes

Upon completion of this course,

1. Students will be able to get general idea of Insects and their morphological features.
2. The students will get a general idea of insect vectors, their classification and the major diseases caused by them.
3. The students will learn about dipterans, Siphonoptera insect's vectors and the diseases caused by them.

3. The students will learn about siphunculata, Hemipteran insect vectors and the diseases caused by them.

GOALPARA COLLEGE

COURSE OUTCOME

B.COM (CBCS)

B.COM 1st SEMESTER

Course: Business Communication(English/Hindi/MIL) Course Code: BCM-AE-1014

- The objective lies in preparing the students for better communicative skills through vocabulary building and written correspondences.
- Secondarily to equip the students with enhanced communicative mediums through new technologies.
- To boost the confidence among students through practical lessons on Presentation, Group Discussion, Personal Interview etc.

Course: Business Communication (Assamese) Course Code: BCM-AE-1014

- From this book the students are expected to learn about the modern technology such as Power Point, Emails, Correspondence through letters, internet and also how to publish their own writings in public newspapers. The students are facilitated the same through the book prescribed for them.

Course: Business Communication (MIL) Course Code: BCM-AE-1014

- To equip students with the effective faculties of reading, writing,

comprehension and communication.

- Secondarily to equip the students with enhanced communicative mediums

through new technologies

Course: Financial accounting: Course Code: COM-HC-1026

- Acquire conceptual knowledge of financial accounting
- Learn about accounting information accounting principles and the use of accounting standard
- Understand the theory of measurement of Business Income
- Learn Computerised accounting system with practical application of Tally-ERP 9
- Learn the procedure of preparation of Final Accounts
- Learn the concept of Hire-Purchase, Installment Payment System and Branch Account

Course: Business Law: Course Code: COM-HC-1036

- Impart basic knowledge of the important business legislation along with relevant case law

Course:Micro Economics Course Code:COM-GE- 1046 (A)

- To understand the consumer buying behaviour and their process of decision making to create demand
- To understand the supply side of the market and producers' equilibrium through cost and revenue.

Course: Investing in Stock Markets Course Code: COM-GE- 1046 (B)

- Provide basic skills to operate in stock markets and the ways of investing in it.
- Enable the student to take up investment in stock markets independently.

B.COM 2nd SEMESTER

Course: Corporate Accounting: Course Code: COM-HC-2026

- Acquire conceptual knowledge of Corporate Accounting and learn about the process of preparation of Final accounts of Joint Stock Company (as per Companies Act, 2013)
- Learn about the concept and methods of valuation of Goodwill and Shares
- Learn about the concepts and accounting
- treatment of Right Shares, Bonus Shares and Buy-Back of Shares
- Learn the basic concepts of Holding A company as per Companies Act and Accounting Standards and preparation of Consolidated Balance Sheet.

Course: Corporate Law Course Code: COM-HC-2036

- Impart basic knowledge of the provisions of the Companies Act 2013
- Impart basic knowledge of the provisions of the Depositories Act, 1996.
- Impart knowledge on practical aspects through case studies involving issues in corporate laws.

Course: Macro Economics Course Code: COM-GE- 2046 (A)

- To provide basic knowledge of macroeconomic variables.
- To understand the working of the variables in determining equilibrium of the economy.
- To understand the policy framework of the economy in the light of open economy.

Course: Insurance and Risk Management Course Code: COM-GE- 2046 (B)

- Develop an understanding among students about identifying analyzing and managing various types of risk.
- Understand principles of insurance and its usefulness in business.
- Impart knowledge on regulatory framework.

B.COM 3rd SEMESTER

Couse:Computer Application in Business Course Code: COM-HC- 3016

- To provide computer skills and knowledge for commerce students and to enhance the student understands of usefulness of information technology tools for business operations
- To enable the students familiar with the practical applications for preparing business information

Couse: Income-Tax Law and Practice Course Code: COM-HC- 3026

- Acquire basic knowledge and equip themselves with application of principles of Income Tax Act 1961 and the relevant rules
- Learn to compute taxable income under different heads of income
- Learn the computation of income tax liability and deduction available
- Learn to file Income Tax Return electronically

Course: Management Principles and Application Course Code: COM-HC- 3036

- Gain knowledge of the principles and practices of management techniques.
- Understand the various managerial functions in detail.
- Apply principles of management in real business environment.

Course:Bussiness Statistics Course Code: COM- GE-3046

- To provide knowledge to students about the basic statistical tools that are used in business and commerce and thus provide them with an expertise in managerial decision making so as to effectively handle statistical data vis-a-vis the application of these tools.

Course: Operation Research In Business Course Code:COM- GE-3047

- To Provide knowledge to the learners in the field of decision making, Queuing Theory, replacement techniques and reliability so as to equip them for business forecasting and decision making

Course: Entrepreneurship Course Code: COM-SEC-HC-3054(A)

- Comprehend the role of entrepreneurship in social-economic development at local, state, national and global level.
- Evaluate the necessary techniques and formalities involved in building start ups.
- Develop an entrepreneurial mindset and zeal to pursue entrepreneurship as a profession and reap the benefits of selfemployment

Course: Entrepreneurship Course Code: COM-SEC-HC-3054

- Comprehend the role of entrepreneurship in social-economic development at local, state, national and global level.
- Evaluate the necessary techniques and formalities involved in building start ups.
- Develop an entrepreneurial mindset and zeal to pursue entrepreneurship as a profession and reap the benefits of self employment

B.COM. 4th SEMESTER

Course: Cost Accounting Course Code: COM-HC-4016

- To acquaint with the basic concepts used in cost accounting
- Learn about various elements of cost like Materials, Labour and Overheads
- Learn the concept and calculation of cost in special situation like Job Costing, Contract Costing and Process Costing
- Acquire knowledge of Integral and Non-Integral System

Course: Business Mathematics Course Code: COM-HC-4026

- To provide the learners with the basic knowledge of mathematical tools so as to familiarise them with the application of these tools in business and economic situations.

Course: Human Resource Management Course Code: COM-HC-4036

- Gain knowledge of the processes to apply Human Resource Management Principles and techniques in dealing with human capital in organizations
- Understand emerging challenges of HRM, methods of acquiring human resource, training them and measuring their performances
- Learn issues related to Voluntary Retirement Scheme (VRS), downsizing, fringe benefits, HRIS, HRA, social security, employee welfare and ethics in HRM

Course:E-Commerce Course Code: COM-SEC-HC-4054

- To provide knowledge about various e-commerce tools, techniques, security issues for conducting business transactions through electronic means.
- To Provide practical skills for online transactions, e-payment, web designing methods, etc.

Course:E-Filing of Returns **Course Code: COM-SEC-HC-4054**

- Acquire concepts and practical knowledge about E-filling of Returns
- Learn how to register on Income Tax E/filling Website and file various Income Tax returns
- Learn about the concept of TDS and E-filing of TDS returns
- Acquire the knowledge about the relevant notification regarding E-filling of GST returns and the process of filling the same.

Course: Indian Economy **Course Code: COM- GE-4046**

- To give a clear picture of the major problems of Indian economy and their solutions.
- To understand the history of growth and development of the economy.
- To understand reforms introduced.
- To inculcate spirit of entrepreneurship

Course: Micro Finance **Cpouse Code: COM- GE-4047**

- concepts of micro-finance and its importance.
- Develop understanding about the institutional structure of microfinance in India
- Develop understanding about the management of micro-finance institutions
- Impart knowledge about microfinance in the Indian context.