PROGRAMME OUTCOMES FOR B.SC.

After completing the B.Sc. course a student is expected achieve the below mentioned Programme Outcomes:

- A student should acquire the knowledge of Effective Citizenship: Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.
- A student should learn Ethics: Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.
- A student should understand the basic concepts, fundamental principles, and the scientific theories related to various scientific phenomena and their relevancies in the day-to-day life.
- A student should acquire the skills in handling scientific instruments, planning and performing in laboratory experiments,
- A student should acquire The skills of observations and drawing logical inferences from the scientific experiments.
- A student should acquire the knowledge of Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.
- A student should acquire the knowledge of Self-directed and Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes
- A student should be able to analyse the given scientific data critically and systematically and the ability to draw the objective and conclusions.
- A student should be able to think creatively to propose novel ideas.
- A student should be able to think critically: He/she should be able to take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.
- A student should learn effective communication: Student should acquire the ability to speak, read, write and listen clearly in person and through electronic media in English and in at least one official language of Assam, and make meaning of the world by connecting people, ideas, books, media and technology.
- A student should learn Social Interaction: Elicit views of others, mediate disagreements and help reach conclusions in group settings.
- A student should realize how interdisciplinary approach helps in providing better solutions and new ideas for the sustainable development.
- A student should be able to develop scientific outlook not only with respect to science subjects but also in all aspects related to life.
- A student should be imbibed ethical, moral and social values in personal and social life leading to highly cultured and civilized personality.

Subject: Chemistry

PROGRAMME SPECIFIC OUTCOMES:

Specific outcome of Chemistry major syllabus prescribed by Gauhati University may be cited below:

1. Understand the chemical thermodynamics and kinetics.

2. Understand electrochemistry of organic molecules and their reaction mechanism.

3. Understand the states of matter.

4. Knowledge of electrochemistry.

5. Knowledge of few aliphatic and aromatics organic compounds- their preparation, properties & reactions (hydrocarbon, alkyl halides, alcohol, carboxylic acid, amines, benzene phenols etc.)

6. Understand the classical approach of atomic structure & theories of bonding, nature and properties of non-transition and transition elements.

7. Empowers students to know the basic of quantum chemistry and quantum approach of atomic structure and chemical bonding.

8. Understanding the phase and chemistry of surfaces and collides.

9. To impart the knowledge of coordination compounds in terms of bonding, stability, reactions and electronic spectra.

10. Understand the theories of molecular spectroscopy and ability to use the theories for studying common molecule.

11. Ability to understand the role of metal iron & other essential elements in biology.

12. To impart the knowledge of statistical thermodynamics.

13. Understanding the photochemistry- its physical importance and use in organic chemistry.

14. To impart the knowledge of few natural products and the drug.

15. Ability to analyze organic compounds and inorganic salt intense.

16. Ability to estimate inorganic ions by volumetric, complexometric, graviometric, nedox and precipitation method.

17. Ability to prepare inorganic complex and organic compounds.

18. Ability to determine various physical properties (like viscosity, surface tension, solubility, molecular mass, specific rotation etc).

19. Ability to undertake project work.

COURSE OUTCOME

Semester	Course code	Course Name	Course Outcome
I	CHE-HC-1016	INORGANIC CHEMISTRY-I	On successful completion, students would have clear understanding of the concepts related to atomic and molecular structure, chemical bonding, periodic properties and redox behaviour of chemical species. Students will also have hands-on experience of standard solution

			preparation in different concentration units and learn volumetric estimation through acid-base and redox reactions.
	CHE-HC-1026	PHYSICAL CHEMISTRY I	In gaseous state unit the students will learn the kinetic theory of gases, ideal gas and real gases. 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. 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 learn the basic solid state chemistry application of x-ray crystallography for the determination of some very simple crystal structures. The students will also learn another important topic "ionic equilibria" in this course.
II	CHE-HC-2016	ORGANIC CHEMISTRY I	Students will be able to identify different classes of organic compounds, describe their reactivity and explain/analyze their chemical and stereo chemical aspects.
	CHE-HC-2026	PHYSICAL CHEMISTRY II	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. Moreover the students are expected to learn partial molar quantities, chemical equilibrium, solutions and colligative properties. After completion of this course, the 36 students will be able to understand the chemical systems from thermodynamic point of view.
III	CHE-HC-3016	INORGANIC CHEMISTRYII	On successful completion of this course students would be able to apply theoretical principles of redox chemistry in the understanding of metallurgical processes. Students will be able to identify the variety of s and p block compounds and comprehend their preparation, structure, bonding, properties and uses. Experiments in this course will boost their quantitative estimation skills and introduce the students to preparative methods in inorganic chemistry.
	CHE-HC-3026	ORGANIC CHEMISTRYII	Students will be able to describe and classify organic compounds in terms of their functional groups and reactivity.
	CHE-HC-3036	PHYSICAL CHEMISTRYIII	The students are expected to learn phase rule and its application in some specific systems. They will also learn rate laws of chemical

			transformation, experimental methods of rate law determination, steady state approximation etc. in chemical kinetics unit. After attending this course the 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.
	CHE-SE-3024	IT SKILLS FOR CHEMISTS	Course learning outcomes focus on skill development related to basic computer operations and information technology. After completing the course the incumbent is able to use the computer for basic purposes of preparing his personnel/business letters, viewing information on Internet (the web), sending mails, using internet banking services etc. After opting this course the students are expected to accumulate the skills in writing activities and Handling numeric data.
	CHE-SE-3034	BASIC ANALYTICA L CHEMISTRY	Upon completion of this course, students shall be able to explain the basic principles of chemical analysis, design/implement microscale and semimicro experiments, record, interpret and analyze data following scientific methodology.
	CHE-SE-3044	CHEMICAL TECHNOLOG Y & SOCIETY	Students shall be familiarized with processes and terminologies in chemical industry, like mass balance, energy balance etc… Learners will be able to use chemical and scientific literacy as a means to better understand the topics related to the society.
	CHE-SE-3054	CHEMOINFO RMATICS	On the successful completion of the course, the students should be able to explain, interpret and critically examine the utility of computers and software tools to solving chemistry related problems. Recognize, apply, compare and predict chemical structures, properties, and reactivity and; solve chemistry related problems. Employ critical thinking and scientific reasoning to design and safely implement laboratory experiments and keep the records of the same. Compile, interpret and analyze the qualitative/quantitative data and communicate the same in a scientific literature.
	CHE-SE-3064	BUSINESS SKILLS FOR CHEMISTS	Students shall be able to explain and/or analyze the important steps of business operations, finance and intellectual property as applied to chemical industry.
	CHE-SE-3074	INTELLECTU AL PROPERTY RIGHTS (IPR)	After completing this course, students will have in-depth understanding about the importance and types of IPR. This course will also provide the

			clarity on the legal and economic aspects of the IP system.
IV	CHE-HC-4016	INORGANIC CHEMISTRYIII	On successful completion, students will be able name coordination compounds according to IUPAC, explain bonding in this class of compounds, understand their various properties in terms of CFSE and predict reactivity. Students will be able to appreciate the general trends in the properties of transition elements in the periodic table and identify differences among the rows. Through the experiments students not only 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.
	CHE-HC-4026	ORGANIC CHEMISTRYIII	Students shall demonstrate the ability to identify and classify different types of N-based derivatives, alkaloids and hetrocyclic compounds/explain their structure mechanism and reactivity/critically examine their synthesis and reactions mechanism.
IV	CHE-HC-4036	PHYSICAL CHEMISTRYIV	In this course the students will learn theories of conductance and electrochemistry. Students will also understand some very important topics such as solubility and solubility products, ionic products of water, conductometric titrations etc. The students are also expected to understand the various parts of electrochemical cells along with Faraday‘s Laws of electrolysis. The students will also gain basic theoretical idea of electrical & magnetic properties of atoms and molecules.
	CHE-SE-4014	ANALYTICAL CLINICAL BIOCHEMISTRY	Students will be able to identify various molecules relevant to a particular pathological condition and their estimation protocols.
	CHE-SE-4024	GREEN METHODS IN CHEMISTRY	Students shall be able to describe and evaluate chemical products and processes from environmental exposure to methods by which environmental problems are evaluated and designing of sustainable solutions. Perspective, define and propose sustainable solutions and critically assess the methods for waste reduction and recycling.
	CHE-SE-4034	PHARMACEUTICAL CHEMISTRY	Students are expected to learn the biosynthetic procedures of various biorelevant small molecules. Students will be able to appreciate the drug development process, identify various small molecules used for treatments different ailments and other physiological processes.

	CHE-SE-4044	CHEMISTRY OF COSMETICS & PERFUMES	Students will learn about the preparation and chemistry involved with the production different cosmetic. This may encourage students to take up entry level jobs at cosmetics industry or venture into commercial production of cosmetics as an entrepreneur.
	CHE-SE-4054	PESTICIDE CHEMISTRY	Students will be able to explain or describe and critically examine different types of pesticides, their activity/toxicity and their applications and the need for the search of an alternative based on natural products.
	CHE-SE-4064	FUEL CHEMISTRY	At the end of this course students will learn about the classes of renewable and non-renewable energy sources. Students will learn about the composition of coal and crude petroleum, their classification, isolation of coal and petroleum products and their usage in various industries. They will also learn to determine industrially significant physical parameters for fuels and lubricants.
V	CHE-HC-5016	ORGANIC CHEMISTRYIV	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.
	CHE-HC-5026	PHYSICAL CHEMISTRY V	After completion of this course the students are expected to understand the application of quantum mechanics in some simple chemical systems such as hydrogen atom or hydrogen like ions. The students will also learn chemical bonding in some simple molecular systems. They will able to understand the basics of various kinds of spectroscopic techniques and photochemistry.
	CHE-HE-5016	APPLICATIONS OF COMPUTERS IN CHEMISTRY	After the completion of this course it will help the student to interpret laboratory data, curve fitting of experimental work. The student will also able to perform quantum mechanical calculations for various molecular models.
	CHE-HE-5026	ANALYTICAL METHODS IN CHEMISTRY	On successful completion students will be have theoretical understanding about choice of various analytical techniques used for qualitative and quantitative characterization of samples. 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.
	CHE-HE-5036	MOLECULAR MODELLING & DRUG DESIGN	Students will be able to identify basic components of computer and programming as applied to computer assisted design and

			modelling of molecules.
	CHE-HE-5046	NOVEL INORGANIC SOLIDS	After the completion of this course it will also be possible for the students to opt for studying an interdisciplinary master‘s programme with an emphasis on the synthesis and applications of various materials or take up a job in the materials production and/or processing industry.
	CHE-HE-5056	POLYMER CHEMISTRY	After completion of this course the students will learn the definition and classifications of polymers, kinetics of polymerization, molecular weight of polymers, glass transition temperature, and polymer solutions etc. They also learn the brief introduction of preparation, structure and properties of some industrially important and technologically promising polymers.
	CHE-HE-5066	INSTRUMENTAL METHODS OF CHEMICAL ANALYSIS	Students shall be able to explain the theoretical basis of different analytical techniques, identify the experimental requirements and compare/analyze the data/results thereof.
VI	CHE-HC-6016	INORGANIC CHEMISTRYIV	By studying this course the students will be expected to learn about how ligand substitution and redox reactions take place in coordination complexes. Students will also learn about organometallic compounds, comprehend their bonding, stability, reactivity and uses. They will be familiar with the variety of catalysts based on transition metals and their application in industry. On successful completion, students in general will be able to appreciate the use of concepts like solubility product, common ion effect, pH etc. in analysis of ions and how a clever design of reactions, it is possible to identify the components in a mixture. 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.
	CHE-HC-6026	ORGANIC CHEMISTRYV	Students will be able to explain/describe basic principles of different spectroscopic techniques and their importance in chemical/organic analysis. Students shall be able to classify/identify/critically examine carbohydrates, polymers and dye materials.
	CHE-HE-6016	GREEN CHEMISTRY	Apart from introducing learners to the principles of green chemistry, this course will make them conversant with applications of green chemistry to organic synthesis. Students will be prepared for taking up entry level jobs in the chemical industry. They also will have the option of studying further in the area.

	CHE-HE-6026	INDUSTRIAL CHEMICALS AND ENVIRONMENT	. After successful completion of the course, students would have learnt about the manufacture, applications and safe ways of storage and handling gaseous and inorganic industrial chemicals. Students will get to know about industrial metallurgy and the energy generation industry. Students will also learn about environmental pollution by various gaseous, liquid wastes and nuclear wastes and their effects on living beings. Finally, the students will learn about industrial waste management, their safe disposal and the importance of environment friendly ―green chemistry‖ in chemical industry.
	CHE-HE-6036	INORGANIC MATERIALS OF INDUSTRIAL IMPORTANCE	This course will establish the basic foundation of industrial inorganic chemistry among the students. This will be helpful for pursuing further studies of industrial chemistry in future. Experiments will help the Students to gather the experience of qualitative and quantitative chemical analysis. Students will be capable of doing analysis of the inorganic materials which are used in our daily life. They will have insight of the industrial processes.
	CHE-HE-6046	RESEARCH METHODOLOGY FOR CHEMISTRY	After completing this course, 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.
	CHE-HE-6056	DISSERTATION	After completing this course students will learn about field work, how to write a report based on the data obtained.

Subject: Mathematics

PROGRAMME SPECIFIC OUTCOMES:

Specific outcome of Mathematics major syllabus prescribed by Gauhati University may be cited below:

1. Ability to learn algebra, abstract algebra linear algebra & vector.
2. Ability to understand calculus and differential equation.
3. Ability to learn Trigonometry, Spherical and astronomy.
4. Knowledge of coordinate geometry and topology.
5. Activity to learn real and numerical analysis.
6. Ability to learn rigid dynamics, aydrostatics and mechanics.
7. Understand the probability and optimization theory of mathematics.
8. Knowledge of discrete mathematics.
9. Ability to learn and apply the computer programming in C.
10. Ability to undertake project work.

COURSE OUTCOMES:

Semester	Course code	Course Name	Course outcome
I	MAT-HC-1016	Calculus	This course will enable the students to: • Learn to differentiate & integrate functions and apply the knowledge in problems in physics, business, economics and life sciences. • Sketch curves in a plane using its mathematical properties in different coordinate systems. • Compute area of surfaces of revolution and the volume of solids by integrating over cross-sectional areas. • Understand the calculus of vector functions and its use to develop the basic principles of planetary motion
	MAT-HC-1026	Algebra	• The foundational ideas of Mathematics such as relations and functions, complex numbers & basic matrix algebra are taught. • Solve system of linear equations required in many problems of physics
II	MAT-HC-2016	Real Analysis	• Students are introduced to the concept of real analysis. • Understand many properties of the real line R, including completeness and Archimedean properties. • Learn to define sequences in terms of functions from

			N to a subset of R. • Recognize bounded, convergent, divergent, Cauchy and monotonic sequences and to calculate their limit superior, limit inferior, and the limit of a bounded sequence.
	MAT-HC-2026	Differential Equation	• Solve differential equations and apply the study of exponential decay model, exponential growth of population, drug assimilation into blood.
III	MAT-HC-3016	Theory of Real Functions	• Learn about continuous and differentiable functions from pure mathematical point of view. • L-Hospital rules help better handle difficult differentiations
	MAT-HC-3026	Group Theory-I	• Introduction to the study of symmetries of a rigid body using group theory. • Helps to study atomic models in chemistry and also to check solvability of a polynomial
	MAT-HC-3036	Analytical Geometry	• Analytic study of basic geometric structures such as parabola, hyperbola and their 3-dimensional analogues
IV	MAT-HC-4016	Multivariate Calculus	The course will enable the students to: • Extend one dimensional calculus to two and higher dimensions. • Understand the maximization and minimization of multivariable functions subject to the given constraints • Learn about inter-relationship amongst the line integral, double and triple integral formulations • Green's theorem, Stokes' and Gauss divergence theorems applies to several problems in complex analysis and partial differential equations
	MAT-HC-4026	Numerical Methods	The course will enable the students to: • 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. • Know about methods to solve system of linear equations, such as False position method, Fixed point interation method, Newton's method, Secant method and LU decomposition. • 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.
	MAT-HC-4036	Ring Theory	• Ring, another abstract algebraic structure that helps better understand polynomials.
V	MAT-HC-5016	Riemann Integration And Metric	The course will enable the students to: • Learn about some of the classes and properties of Riemann integrable functions, and the applications of

		Spaces	the fundamental theorems of integration. • Know about improper integrals including, beta and gamma functions. • 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. • Analyse how a theory advances from a particular frame to a general frame. • Appreciate the mathematical understanding of various geometrical concepts, viz. Balls or connected sets etc. in an abstract setting. • 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. • Learn about the two important topological properties, namely connectedness and compactness of metric spaces.
	MAT-HC-5026	Linear Algebra	The course will enable the students to: • Learn about the concept of linear independence of vectors over a field, and the dimension of a vector space. • Basic concepts of linear transformations, dimension theorem, matrix representation of a linear transformation, and the change of coordinate matrix. • 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. • Compute inner products and determine orthogonality on vector spaces, including Gram−Schmidt orthogonalization to obtain orthonormal basis. • Find the adjoint, normal, unitary and orthogonal operators.
VI	MAT-HC-6016	Complex Analysis	The course will enable the students to: • Learn the significance of differentiability of complex functions leading to the understanding of Cauchy−Riemann equations. • Learn some elementary functions and can evaluate the contour integrals. • Understand the role of Cauchy−Goursat theorem and the Cauchy integral formula. • Expand some simple functions as their Taylor and Laurent series, classify the nature of singularities, find residues and apply Cauchy Residue theorem to evaluate integrals.
	MAT-HC-6026	Partial Differential	The course will enable the students to: • Formulate, classify and transform first order PDEs

		Equations	into canonical form. • Learn about method of characteristics and separation of variables to solve first order PDE's. • Classify and solve second order linear PDEs. • Learn about Cauchy problem for second order PDE and homogeneous as well as nonhomogeneous wave equations. • Apply the method of separation of variables for solving second order PDEs.

Subject: Physics

PROGRAMME SPECIFIC OUTCOMES:

Specific outcome of Physics major syllabus prescribed by Gauhati University may be cited below:

1. Knowledge of mathematical methods for vector analysis, vector differentiation, integration of vectors, curvilinear co- ordinate system, Matrix, differential equations, Algebric operation etc.
2. Ability to understood mechanics.
3. Ability to understood waves & oscillation.
4. Knowledge of ray optics wave optics and modern optics.
5. Ability to understand the properties of matter: elasticity, surface tension & viscosity.
6. Ability to understand electrostatic and magneto statics.
7. Knowledge of classical, quantum and statistical mechanics.
8. Knowledge of computer and ability to apply computer language.
9. Know Understanding the edge of astrophysics and nuclear physics.
10. Understanding the theory of relativity.
11. Ability to undertake project work.

COURSE OUTCOMES:

Semester	Course code	Course Name	Course outcome
I	PHY-HC-1016	Mathematical Physics I	Mathematical physics is considered as the language of physics. On completion of the course the students will able to understand vector and its applications in various fields, differential equations and its applications, different coordinate systems, concept of probability and error.
	PHY-HC-1026	Mechanics	This course would empower the student to acquire engineering skills and Practical knowledge, which help the student in their everyday life. Student will able to understand inertial and non inertial reference frames, Newtonian motion, Galilean transformations, projectile motion, work and energy, Elastic and inelastic collisions, motion under central force, simple harmonic oscillations, special theory of relativity etc.. This course will

			provide a theoretical basis for doing experiments in related areas.
II	PHY-HC-2016	Electricity and magnetism	Electricity, electrodynamics magnetism as well as basic electronics are the theoretical foundation of different practical in physics. Students will able to understand electric and magnetic fields in matter, Dilectric properties of matter magnetic properties of matter, electromagnetic induction,applications of Kirchhofff's law in different circuits, applications of network theorem in circuits.
	PHY-HC-2026	Wave and optics	This course builds on the ideas of harmonics motion to cover in-depth the concept of waves in physics with particular reference on sound and light wave as the special case. Upon successful completion of this course, the students will learn different wave and optical phenomena such as superposition, polarization, interference, diffraction and different diffraction of images.
III	PHY-HC-3016	Mathematical Physics II	This course also focuses on computer programming and numerical analysis to emphasize its role in solving problems in Physics
	PHY-HC-3026	Thermal physics	This course develops a working knowledge of thermodynamics and to use this knowledge to explore various aspect in material science and the physics of condensed matter. Students will have the knowledge and skills to identify and describe the statistical nature of concepts and laws in thermodynamics.
	PHY-HC-3036	Digital system and applications	On successful completion of the course students will able to solve complex integrals using residue
IV	PHY-HC-4016	Mathematical Physics III	theorem, apply Fourier and Laplace transforms in solving differential equations, understand properties of Tensor like Transformation of coordinates, contravariant and co-variant tensors, indices rules for combining tensors.
	PHY-HC-4026	Elements of Modern Physics	This course offer main aspects of the inadequacies of classical mechanics and understand historical development of quantum mechanics and ability to discuss and interpret experiments that reveal the dual nature of matter. This course provides the central concepts of quantum mechanics: wave functions, momentum and energy operator, the Schrodinger equation, time dependent and time independent cases, probability density

			and the normalization techniques, skill development on problem solving e.g. one dimensional rigid box, tunneling through potential barrier, step potential, rectangular barrier. The properties of nuclei like density, size, binding energy, nuclear forces and structure of atomic nucleus, liquid drop model and nuclear shell model and mass formula are also discussed in this course.
	PHY-HC-4036	Analog System and Applications	At the end of the course the student is expected to assimilate the following and possesses basic knowledge of the following, ♣ N and P- type semiconductors, mobility, drift velocity, fabrication of P-N junctions; forward and reverse biased junctions. ♣ Application of PN junction for different type of rectifiers and voltage regulators. ♣ NPN and PNP transistors and basic configurations namely common base, common emitter and common collector, and also about current and voltage gain. ♣ Biasing and equivalent circuits, coupled amplifiers and feedback in amplifiers and oscillators. ♣ Operational amplifiers and knowledge about different configurations namely inverting and noninverting and applications of operational amplifiers in D to A and A to D conversions. ♣ To characterize various devices namely PN junction diodes, LEDs, Zener diode, solar cells, PNP and NPN transistors. Also construct amplifiers and oscillators using discrete components. Demonstrate inverting and non-inverting amplifiers using opamps.
V	PHY-HC-5016	Quantum Mechanics and application	After an exposition of inadequacies of classical mechanics in explaining microscopic phenomena, quantum theory formulation is introduced through Schrodinger equation in this course. The interpretation of wave function of quantum particle and probabilistic nature of its location and subtler points of quantum phenomena are exposed to the student. Through understanding the behavior of quantum particle encountering a i) barrier, ii) potential, the student gets exposed to solving non-relativistic hydrogen atom, for its spectrum and eigen functions. Study of influence of electric and magnetic fields on atoms will help in understanding Stark effect and Zeeman Effect respectively.

	PHY-HC-5026	Solid State Physics	This course provides an introduction to the physics of Condensed Matter or solid state physics. This study attempts to explain various types of phenomena like different crystalline unit cell, magnetic properties of matter, super-conductivity and super fluidity. This is considered as the basic concept towards the material science.
VI	PHY-HC-6016	Electromagnetic Theory	Achieve an understanding of the Maxwell_s equations, role of displacement current, gauge transformations, scalar and vector potentials, Coulomb and Lorentz gauge, boundary conditions at the interface between different media. Apply Maxwell_s equations to deduce wave equation, electromagnetic field energy, momentum and angular momentum density and wave propagation in the unbounded, bounded, vacuum, dielectric, guided and unguided media. Understand the fundamentals of propagation of electromagnetic waves through optical fibres and calculate numerical apertures for step and graded indices and transmission losses.
	PHY-HC-6026	Statistical Mechanics	This course gives the basic concepts and definition of physical quantities in classical statistics and classical distribution law and the application of classical statistics to theory of radiation. Understanding the failure of classical statistics and need for quantum statistics. Learn the following statistics to derive and understand, 1. Bose Einstein statistics and its applications to radiation 2. Ferm-Dirac statistic and its applications to quantum systems.

Subject: Statistics

PROGRAMME SPECIFIC OUTCOMES:

Specific outcome of Statistics major syllabus prescribed by Gauhati University may be cited below:

1. Knowledge of descriptive statistics

2. Understanding the probability theory and its applications in different fields.

3. Ability to understand numerical and computational techniques.

4. Ability to understand application of mathematical methods (like integral calculus, differential calculus, matrices, vector space etc.).

5. Knowledge of standard discrete distribution and continuous distribution.

6. Ability to understand sampling distribution and statistical inference.

7. Knowledge of sample survey and operation research.

8. Knowledge of statistical influence and applied statistics such as econometrics, demand analysis, time series analysis, statistical quality control.

9. Knowledge of computer programme and ability to understand analysis.

10. Ability to undertake project work.

11. Understanding the design of experiment.

COURSE OUTCOMES:

Semester	Course code	Course Name	Course outcome
I	STA-HC-1016	Descriptive Statistics	After completion of this paper, the students will be able to explore the basic knowledge of statistics such as collection, tabulation, comparison, presentation of data. He will also able to find out the variation and the relationship among the variables. He will able to study about the, standard of living of people of various regions by acquiring the knowledge of index number.
	STA-HC-1026	Calculus	After completion of this paper, students are able to explain the relationship between the derivative of a function as a function and the nation of the derivative as the slope of the tangent line to a function at a point. Students can aquire different techniques of solving various problems engineering and science. They can distinguish between linear, nonlinear, partial and ordinary differential equations.
II	STA-HC-2016	Prpbability and Probability Distributions	After completion of this paper, students are able to understand the principle of probability theory and probability distribution for discrete and continuous random variables along with

			pmf, pdf, distribution functions etc. They can also able to understand the marginal and conditional probabilities and covariance of two random variables. They can able to derive the probability distributions relevant to functions of random variables.
	STA-HC-2026	Algebra	After completion of this paper, students are able to understand the technique of the solution of different types of equations like quadratic, biquadratic, cubic etc. they can acquire knowledge about different types of matrices, adjiont and inverse of a matrix, solution of set of linear equations, rank of a matrix, characteristic roots and characteristic vectors and their properties, quadratic forms.
III	STA-HC-3016	Sampling Distributions	After studying this paper students will able to understand the concept of sample ,population, parameter, statistic, distribution of a statistic, hypothesis, type-I and type-II erroretc .They can aquire knowledge about chi-square distribution, t-distribution, F-distribution and their properties and applications in different fields.
	STA-HC-3026	Survey Sampling & Indian Official Statistics	With this paper students can achieved idea about different sampling techniques of, drawing samples from a population. They will able to use simple random sampling with and without replacement, stratified random sampling, systematic sampling, cluster sampling etc. They can also acquire the knowledge about the role of MoSPI, CSO, NSSO, National Statistical Commission.
	STA-HC-3036	Mathematical Analysis	After completion of this paper, students are able to understand real numbers, different type of sets, principle of convergence, monotonic sequence. They can aquire knowledge about the infinite series, limit, continuity, and differentiability of a function, application of mean value theorem, Taylor's theorem. They can also have idea about the application of different formulae of interpolation, central differences, numerical integration, solution of difference equations.
IV	STA-HC-4016	Statistical Inference	With this paper students can understand the concept of estimation, unbiasedness, sufficiency, consistency, efficiency, methods of estimation, principle of test of significance, sequential probability ratio test.
	STA-HC-4026	Linear Models	By this paper student can achieve the knowledge of least square method, Gauss-

			Markov theorem, regression analysis, concept of fixed, random and mixed effect model, analysis of variance and covariance in one-way and two-way classified data for fixed effect model, prediction of fitted model.
	STA-HC-4036	Statistical Quality Control	After completion of this paper, the students will get the basic knowledge of statistical process control, different types of control charts like X-bar & R-chart, X-bar & Schart np-chart, p-chart, c-chart and u-chart .They can also get knowledge of single and double acceptance sampling plan, concept of Six Sigma.
V	STA-HC-5016	Stochastic Process and Queuing Theory	Students will be able to understand the concept of probability generating function, stochastic process, stationary process, Markov chain and its order, transition probability, classification of state .They can also get the knowledge of poisson process and its properties, Queuing system.
	STA-HC-5026	Statistical Computing using C/C++ Programming	Students will be able to gain the basic knowledge of different operators and expressions used im C/C++ programming. They will also be familiar with some loops and arrays used in programming.
VI	STA-HC-6016	Design of Experiment	Students will get knowledge of different design like CRD, RBD, LSD, split plot design, strip plot design, incomplete block design, BIBD and their application in analysis of data found in different fields. They can also be familiar with the different factorial experiment and their utilities in different fields.
	STA-HC-6026	Multivariate Analysis and Nonparametric Methods	Student will get the knowledge of bivariate and multivariate normal distribution along with their properties and applications in various fields. They will also get the concept of different non-parametric test such as Kolmogrov Smirnov test, Sign test, Wilcoxon-MannWhitney test, Kruskal-Wallis test and their practical applications.

Subject: Zoology

PROGRAMME SPECIFIC OUTCOMES:

Specific outcome of Zoology major syllabus prescribed by Gauhati University may be cited below:

- Broad understanding of animal diversity, including knowledge of the scientific classification; evolutionary relationships among the animals and the adaptations they show.

- Understanding of ecology and relationship between biological, chemical and physical factors of the environment; the need of wildlife conservation and management.

- Understanding of how organisms function at the level of the gene, genome, cell, tissue, organ and organ-system. Drawing upon this knowledge, they are able to study the histology and comprehend the comparative anatomy of the organisms.

- Understanding of the development, growth, reproduction, various structural and physiological adaptations as well as behaviour of different forms of animal life.

- Understanding the relationships between structure and functions at different levels of biological organization (e.g., molecules, cells, organs, organisms, populations, and species) in animals and their coordinated function (Physiological, Biochemical, Endocrine and Immune system).

- Understanding the Biological Techniques, Bioinformatics and the application of statistics in Biological science.

- Understanding of the applied biological sciences or economic Zoology such as sericulture, apiculture, aquaculture, lac culture, pest and its management for their career opportunities.

- Make able to think logically from the knowledge gathered undertaking research 55 project, assimilate and analysis of the data and ideas and concluding in the form of project report.

COURSE OUTCOME:

Semester	Course code	Course Name	Course outcome
I	ZOO-HC-1016	Non Cordates -I	Students are able to understand about the characters and classification and life cycle of various Protista, Porifera, Cnideria, Ctinophora, Platyhelminthes and Nemathhelminthes
		Non Cordates -I (Practical)	Student are able to understand and learned how to prepare whole mount, life cycle of various organism included under above mentioned kingdoms and phyla.
	ZOO-HC-1026	Principle of Ecology	Students are able to understand about the basic principle with special reference to population community and ecosystem. At the same time in applied ecological part student will aware with the process of wildlife conservation and management.
		Principle of Ecology (Practical)	Through the practical study Students will come to know about the practical use of various population characteristics, community and ecosystem services. Visit to National park /Biodiversity Park/ wildlife sanctuaries will

			give them live study of ecology.
II	ZOO-HC-2016	Non-Chordates II: Coelomates	Students are able to understand about the characters and classification, social life and evolutionary significance Coelomates.
		Non-Chordates II: Coelomates (Practical)	Students are able to understand about the museum specimen, anatomical and morphological structure and preparation of slide.
	ZOO-HC-2026	Cell Biology	Students are able to understand about the structure and function of cell and cellular organelles, process of cell division and cell communication.
		Cell Biology (Practical)	Students are able to understand about the preparation of various stains and fixatives, determination of protein, mucopolysaccharides and chromosome
III	ZOO-HC-3016	Diversity of Chordata	Students are able to understand about the general characteristics, classification, metamorphosis and animal distribution.
		Diversity of Chordata (Practical)	Students are able to understand about the general characteristics, classification, metamorphosis and animal distribution.
	ZOO-HC-3026	Animal Physiology: Controlling and Coordinating Systems	Students are able to understand the entire animal's functions of the body which includes nutrition. Respiration, heart, excretion, nerve physiology etc. in which all structure, function, process and control.
		Animal Physiology: Controlling and Coordinating Systems (Practical)	Students are able to understand and learned about the various microscopic procedures including microtomy, permanent slides study.
	ZOO-HC-3036	Fundamentals of Biochemistry	Students are able to understand all the biochemical components of the body system are studied. It helps the student to get a view about the chemical compositions of different chemical compounds such as enzymes, hormones and other secretions. It also includes the pathway and chemical which are responsible for the energy production in our body.
		Fundamentals of Biochemistry (Practical)	Students are able to understand and learned various technique of separation and determination of protein, lipid, carbohydrates etc.
IV	ZOO-HC-4016	Comparative Anatomy of Vertebrates	Students are able to understand about the comparative structures of heart, aotic arches, kidney, balancing organ, hearing organ, thyroid, respiratory organs, brain of different animals which give them a definite idea not only the structure but also the structural

			development of that organ and how they become modified according to their need and environment.
		Comparative Anatomy of Vertebrates (Practical)	Students are able to understand and learned various skeletal parts of different organisms and their structural component.
	ZOO-HC-4026	Physiology: Life Sustaining Systems	The entire animal_s functions of the body are studied in this part. It includes nutrition, Respiration, heart, excretion, nerve physiology etc in which all structure, function, process and control.
	ZOO-HC-4036	Biochemistry of Metabolic Processes	Students are able to understand metabolic process including carbohydrates, lipid and protein and also ATP production. Students are able to learn various essays from serum and tissues.
V	ZOO-HC-5016	Molecular Biology	Students are able to understand in details about the nucleic acid, DNA replication, Protein synthesis and its modification and gene regulation.
		Molecular Biology (Practical)	Students are able to understand about the estimation of DNA, RNA and protein synthesis.
	ZOO-HC-5026	Principles of Genetics	Students are able to understand about the Mandelian inheritance, interaction of genes, mutation and its effects.
		Principles of Genetics (Practical)	Students are able to learn about the pedigree analysis, gene interaction study.
VI	ZOO-HC-6016	Developmental Biology	Students are able to acquire a thorough knowledge of embryonic development along with the factors affecting it.
		Developmental Biology (Practical)	Students will be able to learn different developmental stages through microscopic study of permanent slides and also from culture based study of certain animals.
	ZOO-HC-6026	Evolutionary Biology	Students will able to understand different evolutional stages during the development of biological science.

Subject: Botany

PROGRAMME SPECIFIC OUTCOMES:

Specific outcome of Botany major syllabus prescribed by Gauhati University may be cited below:

1. Critically evaluation of ideas and arguments by collection relevant information about the plants, so as recognize the position of plant in the broad classification and phylogenetic level.

2. Acquire depth and breadth of knowledge/expertise in the field of Plant Identification.

3. Iinterpretation of collected information and use taxonomical information to evaluate and formulate a position of plant in taxonomy.

4. Students will be able to collect datas, formulate and analyse the collecting data but applying scientific methods.

5. Students will be able to present scientific hypotheses and data both orally and in writing in the formats.

6. Students will be able to access the primary literature, identify relevant works for a particular topic, and evaluate the scientific content of these works.

7. Students will be able to use physical principles (physics, chemistry) for bio- chemical analysis and also analyse data by using statistical and mathematical formulas

8. Students will be able to identify the major groups of plants and be able to classify them within a phylogenetic framework. They will be able to compare and contrast the characteristics of plants, algae, and fungi that differentiate them from each other and from other forms of life.

9. Students will be able to use the evidence of comparative biology to explain the theory of evolution for the unity and diversity of life on earth. They will be able to use specific examples to explain how modification has shaped plant morphology, physiology, and life history.

10. Students will be able to explain the functions at the level of gene, genome, cell, tissue, flower development of plants. They can also be able to give specific examples of physiological adaptations, reproductions, development and mode of life cycle of different forms of plants.

11. Students will be able to explain the ecological interconnections among different life forms on earth by tracing nutrient and energy flow through environment and structure of populations, communities and ecosystems.

12. Students will be able to explain the experimental techniques and methods of analysis for their area of specialization within biology.

COURSE OUTCOMES:

Semester	Course code	Course Name	Course outcome
I	BOT-HC-1016	Phycology and Microbiology	1. Understand the diversity among Algae. 2. Know the systematic, morphology and structure, of Algae. 3. Understand the life cycle pattern of Algae. 4. Understand the useful and harmful activities of Algae. 5. Understand the Microbial world and their diversity 6. Know the Economic Importance of Microbes 7. Know the harmful effects of microbes 8. Know the role of microbes in Research activities
	BOT-HC-1026	Biomolecules and	1. Know the chemical nature of biomolecules.

		Cell biology	2. Understand the different types of interaction in Biomolecules. 3. Structure and general features of enzymes. 4. Concept of enzyme activity and enzyme inhibition. 5. Understand the Biochemical nature of cell and cell organallies 6. Know about the cell divisions: mitosis & meiosis 7. know the endomembrane system and protein transport
II	BOT-HC-2016	Mycology and Phytopathology	1. Understand the Biodiversity of Fungi and understand the life cycle pattern of Fungi 2. Know the Economic Importance of Fungi 3. Know the terminologies in plant pathology. 4. Understand the scope and importance of Plant Pathology. 5. Know the prevention and control measures of plant diseases and its effect on economy of crops.
	BOT-HC-2026	Archegoniate	1. Understand the morphological diversity of Bryophytes. 2. Understand the economical and ecological importance of the Bryophytes. 3. Know the taxonomic position, occurrence, thallus structure, reproduction of Bryophytes. 4. Understand the morphological diversity of Pteridophytes. 5. Understand the economic and ecological importance of the Pteridophytes 6. Know the taxonomic position, occurrence, thallus structure, reproduction of Pteridophytes. 7. Know the evolution of Bryophytes and Pteridophytes.
III	BOT-HC-3016	Morphology and Anatomy of Angiosperms	1. Understand plant communities and ecological adaptations in plants. 2. Understand the tissues and tissue systems of Plants 3. Know the wood anatomy 4. Know the anatomical difference of dicot and monocot 5. Know the origin, development, arrangement and diversity in size and shape of leaves.
	BOT-HC-3026	Economic Botany	1. Know the major introduced plant species, concept of centre of origin and their importance 2. Know about crop domestication and loss of genetic diversity 3. Understand the evolution of new crops /varieties 4. Know about the germplasm diversity 5. Understand the economic importance of various plant species.
	BOT-HC-3036	Genetics	1. Know about the genomic organization or living organisms, study of genes genome, chromosome etc. 2. Gain knowledge on Mendels genetics and its extensions 3. Know about variation in chromosome number and structure 4 understand about population and evolutionary genetics

IV	BOT-HC-4016	Molecular Biology	1. Gain knowledge about the mechanism of DNA replication. 2. Gain knowledge of transcription in prokaryotes and eukaryotes. 3. Gain knowledge of Processing and modification of RNA. 4. Gain knowledge of protein synthesis, its modification and its involvement in formation of polypeptides.
	BOT-HC-4026	Plant Ecology and Phytogeography	1. Understands the inter-relationship between the living world and environment 2. Know the soil profile and role of climate in soil development 3. Understand the concept of ecology and its specification 4. Understands Ecosystem and its components 5. Understands the principles, endemism, biomes and phytogeographical divisions of India.
	BOT-HC-4036	Plant Systematics	1. Gain knowledge of plant identification, concept of classification, principle and rules of nomenclature 2. Gain knowledge of origin and evolution of angiosperm and their evolutionary relationship 3. Know biometrics, numerical taxonomy and cladistics 4. Know the history of plant classification
V	BOT-HC-5016	Reproductive Biology of Angiosperm	1. Gain knowledge of reproductive development of Angiospermic plant 2. Understand the pollination and fertilization mechanism 3. Gain knowledge embryo, endosperm, seed, structure and their development 4. Know about apomixes and polyembryony
	BOT-HC-5026	Plant Physiology	1 .Gain knowledge of Plant water relationship 2. Gain knowledge of mineral nutrition, nutrient uptake and translocation 3. Gain knowledge of plant growth regulators, Physiology of flowerings 4. Gain knowledge of crytochromes and phototropins
VI	BOT-HC-6016	Plant Metabolism	1. Understand the concept of Metabolism 2. Gain knowledge of mechanism of photosynthesis, respiration, ATP synthesis 3. Gain knowledge of Metabolisms of Carbohydrate, Lipid and Nitrogen 4. Understands the Mechanism of signal transduction
	BOT-HC-6026	Plant Biotechnology	1. Understand the method, utilization and importance of Plant Tissue culture. 2. Gain knowledge of DNA technology 3. Gene cloning and method of gene transfer. 4. Gain knowledge on application of Biotechnology

Programme - B.Voc

PROGRAMME SPECIFIC OUTCOMES:

To make sure that the graduates of the higher education system have the knowledge and skills they need to get a job or start their own business, it's been a long-term goal to make sure that higher education meets the needs of the economy. In order to build a comprehensive and well-groomed graduate, higher education must include the needs of many businesses into its curriculum in an inventive and flexible manner. The Bachelor of Vocation (B. Voc.) course is a new way for the government to make sure that higher education meets the needs of the economy. This way, graduates of the higher education system will be able to find jobs and start their own businesses.

The programme and course are run by the National Skills Development Corporation and the Sector Skill Councils that represent each industry. For example, Sector Skill Councils are supposed to write National Occupational Standards (NOS) that have different NSQF levels for different job roles in their industries. This is one of the things they're supposed to do. It is important to include the skills needed for specific job roles in the higher education system so that graduates can get jobs after they finish school. For the food processing industry, the SSC is FICSI- Food Industry Capacity & Skill Initiative. It is a branch of food science called food processing. It has methods, procedures, and techniques that help people turn raw ingredients into food that they can eat. People in both developed and developing countries are becoming more and more likely to buy food. This has led to the growth of food processing industries that use different techniques and skills.

Medical laboratory technology is one of the most rapidly expanding health care fields. According to National Skill Development Council (NSDC) report there is a huge gap of skilled Medical Lab professionals all across the country. Mangaldai College introduce professional skill based course like Medical Lab & Molecular Diagnostic Technology emanate like an opportunity for the students and aspiring professionals in the sector of Healthcare Industry.

Course outcomes

Trade: Medical Lab & Molecular Diagnostic Technology

CO 1: This paper will help the students to understand the basics and fundamentals of cells, tissues, different systems of the body including GI system, Respiratory system, cardiovascular system, urinary system, reproductive system endocrine system etc. Further the students have to learn about the medical terminology used in human anatomy, functions of different systems of human.

CO 2: This paper will help the students to identify various laboratory glassware, plastic ware and instruments along with care and maintenance of equipments and apparatus used in the laboratory. The students have understood the phlebotomist's duties towards identification of patient and taking their consents before withdrawing blood specimens. In addition to that preparing appropriate site for blood samples.

CO 3: In this paper the students have to know about various blood collection equipments, different types of blood sample collections, need to know about color coded vacutainers, anticoagulants, further the students has to know basics about blood and other samples with suitable collections and various tests. The students have to learn about various laboratory hazards, safety and first-aid and personal hygiene.

CO 4: In this paper the student will have basic knowledge about various microorganisms like bacteria and its growth & nutrition, virus, parasites and identify bacteria, preparation of culture medium to grow bacteria. Further the students will be able to perform various sterilization methods; they will understand hospital born disease and its prevention and control.

CO 5: In this paper the students will be able to understand basics about biochemistry of carbohydrates, lipids, vitamins, enzymes. Further they will be able to learn code of conduct for medical laboratory. The students will have to perform various blood and urine tests.

CO 6: In this paper the students will be able to understand basics about the production of various blood cells, haemostasis and coagulation and related tests, slide preparation for blood and bone marrow for normal and abnormal cells. Further the students have to know various healthcare waste, safe handling and management of waste.

CO 7: In this paper the students will be able to understand about various bacteria & fungus and diseases caused by it and lab diagnosis. Further the students will learn about various staining techniques for bacterial cell wall, bacterial capsule, fungal staining etc.

CO 8: In this paper the students will understand about the basics of Acid base balance, food and nutrition and its importance along with lipids, amino acids and protein metabolism.

CO 9: In this paper the students will know about haemoglobin and various types of anaemia, different types of blood cell counts, further they will learn about basics of histotechniques and body fluid analysis.

CO 10: In this paper the students will learn about various parasites and its types and the disease caused and various virus its transmission lab diagnosis etc. further the students will be able to identify different blood and stool parasites.

CO 11: In this paper the students will learn about hormone and its mechanism, different enzymes and elevated levels in various disease conditions, further the students will know about the functions of liver, kidney, heart, thyroid and tests to evaluate these organs.

CO 12: In this paper the students will understand about blood groups, blood transfusion, different methods to identify blood groups, matching donor's blood with patient's blood, various screening procedures for donors. Further the students will be able to learn about cytotechniques.

CO 13: In this paper the students will understand about body defense system and types, vaccines and immunization, infection that can be transmitted from hospital, prevention and control of hospital infection. Further the students will have idea about various serological tests.

CO 14: In this paper the students will learn about water and mineral metabolism and associated diseases related to it, different inorganic ions and importance in our body, formation of kidney stone, concept of acid and base with related disease with acid base balance disturbances.

CO 15: In this paper the students will learn about the tissue specimen, taking specimen for grossing, fix it with proper fixative, processing the tissue specimen to place the fixed tissue in the paraffin, taking tissue specimen for embedding, proper sectioning of the tissue and stain it with various staining solutions.

CO 16: In this paper the students will learn in details about various medically important bacteria, basics of molecular biology and different types of microscope including electron microscope.

CO 17: In this paper the students will learn about basics of DNA & RNA, replication of DNA, genetic engineering, Metabolic disorders of amino acids, elevation of enzymes in disease condition, isoenzymes, techniques used in biochemistry, further the students will understand the basics of biostatistics.

CO 18: In this paper the students will learn in details about cytopathology and various branches, different types of specimen used in cytopathology lab, different normal and abnormal cells, Fine needle aspiration cytology along with different fixation and staining.

Trade: Food Processing Technology

CO1: The basic emphasis of this paper is to introduce the students of the trade about the basics of food, processing of food and different unit operations, food quality, different sanitation measures, food safety, food preservation and packaging such that students can get some ideas about the field in food sectors. Also, students are giving exposed to basic knowledge on measurements, calculation, formulations and use of basic computer knowledge in the areas of food analysis and processing.

CO2: This paper is arranged as such that, students can have the proper knowledge on basic machineries used in food processing together with different Govt. food agencies who regulates and formulates different laws and rules related to food. Also, to attract the generation to make employability basic ideas are given regarding entrepreneurship and different programs.

CO3: This paper is basically formulated keeping in the mind of NSQF 4 level QP- Jam, Jelly and Ketchup processing Technician to fulfill the program criteria. The paper is structured as such that students can get the different science, chemistry, processing, preservation, packaging and quality maintenance of fruits and vegetable processing.

CO4: This paper transfers about different food quality regulation and maintenance in food industry or that kind of organizations to the students. This paper introduces about the principles of quality management system along with different systems utilized in industry to maintain proper work environment.

CO5: This paper focus on giving the students about the complete ideas of food chemistry and conjugation of different food from nutritional and formulation point of view along with the scientific benefits of different kinds of foods in our health.

CO6: The paper is structured based on the QP- Plant Baker of NSQF Level 5 such that students have the knowledge and skill on bakery field, their processing, chemistry of different ingredients utilized for processing, quality management, documentation and certification.

CO7: This paper provides knowledge to the students of the trade about different quality analysis procedure of food to know about different effects of intrinsic and extrinsic parameters on food.

CO8: Quality system is an integral part of any food industry, without quality other all things are worthless. So the paper provides proper knowledge on different Quality Management System, different national and international bodies who give certification to the companies, different disciplinary activities maintain in the industries to meet and upgrade the quality system.

CO9: Based on the NSQF level 6 of QP- Food Microbiologist, the paper provides the students about the basic knowledge of food microbiology, instrumentation, different microorganisms, their characters, monitoring of environment and analysis of food for microbiological aspects.

CO10: This paper introduces students about the different modern technologies used in food analysis. As food is basic needs of human existence, safety of it is prime most important. So to minimize different errors, food engineering and technology sectors is always working in the areas where they can provide better technology, and to provide knowledge on these modern techniques and tools the course is formulated.

CO11: To provide knowledge about handling of complain and customer and to sustain in the quality, the course is maintained as such that students have the proper knowledge on quality tools, HACCP system, audits and documentation procedure.

CO12: Based on the NSQF level 6 of QP- Food Microbiologist, the paper provides the students about the food spoilage induces by different microorganisms, their safety, different useful and pathogenic microorganism and their utilizations and effects in food respectively. Along with that focus is given on utilization of good microorganisms to process different indigenous fermented food products.

CO13: This paper provides an understanding about different cereal grains, pulses, oilseeds, their processing and chemistry. As we are living in the areas where the place is rich with different cultivation, so to provide the basics science regarding what we consume is mainly focused in those areas with subject specific.

CO14: As a protein rich item generally we consume the non vegan items like meat, fish and poultry and it is seen that many youth are self employable within this areas. So this paper endow with different scientific knowledge, their storage, processing and quality maintenance of those particular product.

CO15: Milk based industries are now-a-days gaining importance and rising in the areas as production of milk is good in India. Collection of milk from different areas or from society is now-a-days quite easy and this benefits both the root level and high level as it gives economic growth. Based on that different industries are establishes which gives employability. So, to be a good manager in those areas, paper is designed as such that it fulfil the NSQF Level 7 with QP-Production manager.

CO16: Assam is rich in plantation product like tea. This paper provides the general ideas about different tea, their quality aspects together with the science behind the processing and flavour of tea. The paper is oriented as such that students get a total exposure of industrial tea processing.

CO17: Packaging is a silent salesman. To keep food at its best quality from every aspect, it should properly protect and different packaging materials together with various innovative technologies are utilized by food processer in this regard. To give an exposure in this regard, the paper is designed in a way that it contains all the basics of food packaging, their characters and importance, instrumentation and new technologies of food packaging system.

CO18: This paper is given to shape the student in research and innovation and utilized their knowledge those they gather throughout the curriculum.

PROGRAMME OUTCOME FOR B.A.

After completing the B.A. course a student is expected achieve the below mentioned Programme Outcomes:

- A student should acquire the knowledge of Effective Citizenship: Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.
- A student should learn Ethics: Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.
- A student should acquire the knowledge of Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.
- A student should acquire the knowledge of Self-directed and Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes.
- A student should learn effective communication: Student should acquire the ability to speak, read, write and listen clearly in person and through electronic media in English and in at least one official language of Assam, and make meaning of the world by connecting people, ideas, books, media and technology.
- A student should learn Social Interaction: Elicit views of others, mediate disagreements and help reach conclusions in group settings.
- A student should understand the basic concepts, fundamental principles, and various theories in the taught subjects.
- A student should realize the importance of literature in terms of aesthetic, mental, moral, intellectual development of an individual and accordingly of thesociety.
- A student should understand how issues in the social science get influenced by the literature and how the literature can provide solutions to the socialissues.
- A student should be able to think critically: He/she should be able to take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.

Subject: English

PROGRAMME SPECIFIC OUTCOMES:

Specific outcome of English major syllabus prescribed by Gauhati University may be cited below:

- The Indian and other literature like European, British etc. provide the students to understand various types of literature and culture.
- The Classical Literature provides a broader view of the literatures of the world, and the possibility of cultural exchange.
- The modern English literature focuses on the latest developments in the field of literature from around the world.
- The texts are cortex in different socio-cultural and political events and movements. The multidimensional knowledge of the subject contained in these texts has a great importance in today's society.
- The syllabus offers a wide variety of optional papers enabling the learners come to know the interrelation of life with literature.
- The conceptions of the writers contains in the compositions of Classical Literature, American and African Literature help the learners to explore more and more new ideas and motivate them to undertake a comparative study.

COURSE OUTCOME

Semester	Course code	Course Name	Course outcome
I	ENG-HC-1016	Indian Classical Literature	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 think laterally about literatures of the world, and the possibility of cultural exchange.
	ENG-HC-1026	European Classical Literature	This paper introduces students to a selection of Classical Literatures of Europe 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. 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.
II	ENG-HC-2016	Indian Writing in English	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 contexts.
	ENG-HC-2026	British Poetry and Drama:14th to the 17th centuries	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 the seminal issues and preoccupations of the writers and their ages as reflected in these texts.
III	ENG-HC-3016	History of English Literature and Forms	• Acquire a sense of the historical development of each literary form. • Gain understanding of the contexts in which literary forms and individual texts emerge. • Learn to analyze texts as representative of broad generic explorations.
	ENG-HC-3026	American Literature	This paper will enable the students with the main trends 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. Hence, the paper will 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.
	ENG-HC-	British Poetry and	This paper will familiarize the students with

	3036	Drama: 17th and 18th Centuries	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 will encourage the students to look at the economic, political and social changes in Britain during this period, such as the shifts from the Puritan Age to the Restoration and Neoclassical periods. It will also enable the students to familiarize 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 will be understood in the process of this study.
IV	ENG-HC-4016	British Literature: The 18th Century	This paper will familiarize the students with British literature in the 18th century, an age in which reason and rationality dominated and saw the publication of some of the best novels and works of non-fictional prose and poetry in the English language. This paper will also enable the students to familiarize with quite a number of women writers who were also part of the literary scene and how they represented the age through their various forms of writings.
	ENG-HC-4026	British Romantic Literature	This paper will familiarize the students with the 19th century triumph of the Romantic imagination, expressing itself most memorably in the poetry of Blake, Burns, Wordsworth, Coleridge, Shelley, and Keats as well as the spirit of revolt with very different ideas about the relationship between humans and nature and the role of the poet taking hold. Thus the paper will enable the students to appreciate the essence of the Romantic vision.
	ENG-HC-4036	British Literature: The 19th Century	The paper will expose the students to the groundbreaking 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. It will familiarize the students the trends from Austen to Rossetti that represents a remarkable literary development and range of works, addressing a very diverse array of social preoccupations.
V	ENG-HC-5016	British Literature: The 20th Century	This paper will familiarize the students with the voice of Modernism in arts and literature, with its urgent desire to break with the codes and conventions of the past, experiment with

			new forms and idioms, and its cosmopolitan willingness to open itself up to influences coming from other shores. It will also get acquainted with the ethos of postmodernism through a reading of recent poetic and fictional works.
	ENG-HC-5026	Women's Writing	This paper will familiarize the students to the 19th and 20th century writings by women living in different geographical and socio cultural settings. Students will get acquainted with the distinct experiences of women articulated in a variety of genres-poetry, novels, short stories, and autobiography. It will also familiarize the students with the earliest feminist treatises of the western world.
	DSE ENG-HE-5016	History of English Literature and Forms	After studying this paper, students will acquire a sense of the historical development of each literary form. They will gain understanding of the contexts in which literary forms and individual texts emerge. They will learn to analyze texts as representative of broad generic explorations.
	ENG-HE-5026	Modern Indian Writing in English Translation	This paper will introduce the students with the richness and diversity of Indian literature written in the regional languages and will testify to the diverse cultural and regional preoccupations in the respective regions these languages belong to.
	ENG-HE-5036	Literature of the Indian Diaspora	This paper will introduce the students with the ideas of transnationalism, exile, migration, displacement, and so on, literature of the diaspora has come to exert a strong presence in the global scene.
	ENG-HE-5046	Nineteenth Century European Realism	This paper will provide an interesting sampling of the traditions that contributed to the growth and consolidation of European Realism in the nineteenth century. Study of these texts will also facilitate the understanding of the gradual movement towards modernism in the twentieth century which was, in many ways, both a response and a reaction to the major tendencies of European Realism.
	ENG-HE-5056	Literary Criticism and Literary Theory	This paper will familiarize students with some important texts on literary criticism and literary theory and inform the students on the shifts in literary interpretations and critical approaches so as to equip them while reading texts across genres.
	ENG-HE-5066	Science Fiction and	This paper will enable the students to explore

		Detective Literature	the ways in which new narrative possibilities have emerged due to the human fascination for crime, mystery and improbable occurrences.
	ENG-HC-5016	Modern European Drama	The paper will familiarize the students to the innovative dramatic works of playwrights from different locations in Europe, which taken together represents the wide range of modern drama and its fortunes on the written page and the stage. The selected plays will allow an understanding of the emergence of avant-garde movements and trends and dramatic devices and techniques during the period of modernism which eventually influenced theatrical practices in other nations of the world.
	ENG-HC-5026	Postcolonial Literatures	This paper will familiarize the students to the European Colonialism since the 15th century, and the effects of the experience of colonialism around the world even in the postcolonial era. It will also acquaint the students with some of the novels, short stories and poems from postcolonial literatures across the world, with the texts showcasing the many regional, cultural differences and peculiarities, as well as common and shared experiences of the postcolonial condition.
VI	DSE ENG-HE-6016	Literature and Cinema	Literature and Cinema are two distinct but equally extraordinary works of art. This paper will enable the students to understand how the two contribute to each other in terms of cultural interaction and re-reading.
	DSE ENG-HE-6026	World Literatures	This paper will encourage students to think laterally about literatures of the world, and the possibility of cultural exchange.
	DSE ENG-HE-6036	Partition Literature	This paper will familiarize the students with the impact of partition on human emotions and values, and the subsequent changes brought out by it in the cultural transmission.
	DSE ENG-HE-6046	Travel Writing	The paper will enable the students to explore the ways in which travel writing has been an indispensible part of English literature, both in terms of its contribution to its richness as well as an avenue for human's development. The paper will also explore the ways in which travel accounts of voyage and discovery of new lands led to the development of the genre of travel writing in literature, and how it had positive externalities towards enriching other disciplines like history, geography, science

			etc.
	ENG-HE-6056	Life Writing	This paper will enable the students to understand the element of narrativization in seemingly linear, transparent, straight forward accounts of lives of significant people set down in memoirs, biographies and letters.
	ENG-HE-6066	Writings from North East India	This paper will familiarize the students with the latest trends in writing by the authors from North-East India and how they represent this part of India in global scenario.

Subject: Assamese

PROGRAMME SPECIFIC OUTCOMES:

Specific outcome of Assamese major syllabus prescribed by Gauhati University may be cited below:

1. The syllabus covers wide range of topics on Assamese literature like Romantic literature, Devotional literature, oral literature, etc. The learners can come to know about the various information of Assamese literature at different period of time. Especially through the ―Charyapada‖ the students get the information of the socio-cultural background of Assam.
2. The advent of Neo-Vaishnavism and the composition of Sankardev, Madhavdev and others incorporated in the syllabus and above all the compositions like the ―Kirtonghosa‖, ―Bargeet‖, ―Ankiya Nat‖ etc, not only strengthen the religion but also create awareness among the learners to fight against the social evils like castism, superstitious etc.
3. The old and modern Assamese poems acquaint the learners with the socio-cultural affairs of the society. These also give inspiration to learners to face the challenges of real life.
4. Through this syllabus the students come to Know Assamese culture, the elements of folk culture, the festivals of Assam and the tradition of sakta, saiva and vaishnava dharma.
5. The knowledge of philosophy gives the opportunity to the learners to know the linguistic pattern of various languages as well as the journey of the Assamese language through various languages like Pali, Prakrit, Apabhramsa, Magadhi etc.
6. The technical literature of Assamese contains poetics (Both Indian and western), Metres, Rhetorics, etc, and the lessons on Assamese grammar give a solid foundation for learning Assamese language.
7. The syllabus of Assamese has incorporated the translation works of the short stories and novels.

COURSE OUTCOMES:

Semester	Course code	Course Name	Course outcome
I	ASM - HC – 1016	History of Assamese literature (Charyapada – Sankari age)	Students will learn ancient periods mainly the age of pre-Sankarism, age of Sankari etc.
	ASM - HC – 1026	History of Assamese literature (Post Sankari age-Arunodoi age)	Students will be familiar with the important literate of post sankari age, pre arunudoi age, and arunudoi age.
II	ASM –	Introduction to Language	Students can learn about the formation of

	HC– 2016		Assamese language its basic structure and so on.
	ASM – HC– 2026	Criticism of Literature	By the study of this paper students can learn eastern and western criticism of literature and its various components related it.
III	ASM – HC– 3016	Entry to Assamese Literature	Through this paper students can motivate regarding various aspect of Assamese Literature mainly folk tales, poems writing, short story writing, articles writing and also can learn about the auto-Biography of great man (like Bhabendra Nath Saikia, Krishna Kanta Handique, Homen Borgohain) travel literature and so on.
	ASM – HC– 3026	Introduction to Assamese Poetry	Students can learn about the origin formation writing style of the poems in various ages.
	ASM – HC– 3036	Assamese Culture	Through this paper students can learn about the History of Assamese culture and its important in the society
IV	ASM – HC– 4016	Comparative study of Indian Literature	Though this paper students can learn about the introduction of comparative literature, Short Stories and Novels.
	ASM – HC– 4026	Assimilation of Assamese literature - Aryan and non-Aryan	Though this paper students can learn the origin of Assamese language and its relation with nonAryan and to days component of Assamese language.
	ASM – HC– 4036	Assamese Prose literature (From the beginning to eighteen century)	Students can learn about the Assamese Prose History mainly Sakardeva s Ankiya Nat, Bhattadeva khatha-gita, khatha-guru charit and satsari Assam Burangi.
V	ASM – HC– 5016	Assamese drama and style of performance (From the beginning to eighteen century)	Though this paper students can learn about the History of Assamese Drama, style of its performance on the age of Sankardeva, Preindependence and post-independence age. Again, they learn activity of gayan-bayan etc.
	ASM – HC– 5026	Assamese Grammar	Though this paper students can learn about the alphabet, sentences, tense, number etc. again they will be learned about sentence and its rules of formation in Assamese language.
VI	ASM – HC– 6016	Assamese Short Story and Novel	Though this paper students can learn about the History of short stories, Novels and its necessity in the field of Assamese literature.
	ASM – HC– 6026	History of Assamese Script	Though this paper student can learn about the History of Assamese alphabet as example copper plates, inscriptions etc. and in the reigns of Bhaskar Varma Dubi and Nidhanpur rule.

Subject: Economics

PROGRAMME SPECIFIC OUTCOMES:

Specific outcome of Economics major syllabus prescribed by Gauhati University may be cited below:

1. The students will understand the all-important economic behavior of individual economic unit. 2. The students will be able to know the macro-economic structure of an economy.
3. The students will be able to know how prices are set under different market structure.
4. The students will be able to learn the role of money and monetary policy in an economy
5. The students will be able to learn calculus and mathematics in Economics
6. The students will be able to learn the concept of economic development and growth.
7. The students will be able to learn the principles of public finance.
8. The students will be able to learn different statistical techniques used in Economics
9. The students will be able to learn principles of econometrics.
10. The students will be to learn the impact of economic activity on environment.
11. The students will be able to learn history of Economic thought.

COURSE OUTCOMES:

Semester	Course code	Course Name	Course outcome
I	ECO-HC-1016	Introductory Micro Economics	This course is designed to expose the students to the basic principles of microeconomic theory. The emphasis will be on thinking like an economist and the course will illustrate how microeconomic concepts can be applied to analyze real-life situations
	ECO-HC-1026	Mathematical methods in Economics-I	The objective of this sequence is to transmit the body of basic mathematics that enables the study of economic theory at the undergraduate level
II	ECO-HC-2016	Introductory Macro Economics	This course aims to introduce the students to the basic concepts of Macroeconomics. This course discusses the preliminary concepts associated with the determination and measurement of aggregate macroeconomic variable
	ECO-HC-2026	Mathematical methods in Economics- II	The objective of this course is to transmit the body of basic mathematics that enables the study of economic theory at the undergraduate level, specifically the courses on microeconomic theory, macroeconomic theory, statistics and econometrics set out in this Syllabus
III	ECO-HC-3016	Intermediate Micro Economics I	The course is designed to provide a sound training in microeconomic theory to formally analyze the behaviour of individual agents
	ECO-HC-3026	Intermediate Macro Economics I	This course introduces the students to formal modeling of a macro-economy in terms of

			analytical tools. It discusses various alternative theories of output and employment determination in a closed economy in the short run as well as medium run, and the role of policy in this context
	ECO-HC-3036	Statistical methods for Economics	This is a course on statistical methods for economics. It begins with some basic concepts and terminology that are fundamental to statistical analysis and inference. It then develops the notion of probability, followed by probability distributions of discrete and continuous random variables and of joint distributions.
IV	ECO-HC-4016	Intermediate Micro Economics-II	The emphasis will be on giving conceptual clarity to the student coupled with the use of mathematical tools and reasoning. It covers general equilibrium and welfare, imperfect markets and topics under information economics.
	ECO-HC-4026	Intermediate Macro Economics -II	In this course, the students are introduced to the long run dynamic issues like growth and technical progress. It also provides the micro-foundations to the various aggregative concepts
	ECO-HC-4036	Introductory Econometrics	This course provides a comprehensive introduction to basic econometric concepts and techniques. It covers statistical concepts of hypothesis testing, estimation and diagnostic testing of simple and multiple regression models.
V	ECO-HC-5016	Indian Economy I	This course reviews major trends in economic indicators and policy debates in India in the postIndependence period, with particular emphasis on paradigm shifts and turning points
	ECO-HC-5026	Development Economics I	The course begins with a discussion of alternative conceptions of development and their justification. It then proceeds to aggregate models of growth and cross-national comparisons of the growth experience that can help evaluate these models.
	DSE 1 ECO-HE-5016	Economics of Health &Education	This course provides a microeconomic framework to analyze, among other things, individual choice in the demand for health and education, government intervention and aspects of inequity and discrimination in both sectors. It also gives an overview of health and education in India.
	DSE-2 ECO-HE-	Money and Financial Market	This course exposes students to the theory and functioning of the monetary and financial

	5026		sectors of the economy. It highlights the organization, structure and role of financial markets and institutions. It also discusses interest rates, monetary management and instruments of monetary control. Financial and banking sector reforms and monetary policy with special reference to India are also covered.
	DSE-3 ECO-HE-5036	Public Finance	This course is a non-technical overview of government finances with special reference to India. It will look into the efficiency and equity aspects of taxation of the centre, states and the local governments and the issues of fiscal federalism and decentralization in India. The course will be useful for students aiming towards careers in the government sector, policy analysis, business and journalism.
VI	ECO-HC-6016	Indian Economy II	This course examines sector-specific polices and their impact in shaping trends in key economic indicators in India. It highlights major policy debates and evaluates the Indian empirical evidence. Given the rapid changes taking place in the country, the reading list will have to be updated annually.
	ECO-HC-6026	Development Economics II	It begins with basic demographic concepts and their evolution during the process of development. The structure of markets and contracts is linked to the particular problems of enforcement experienced in poor countries. The governance of communities and organizations is studied and this is then linked to questions of sustainable growth. The course ends with reflections on the role of globalization and increased international dependence on the process of development
	DSE 1 ECO-HE-6016	Environmental Economics	This course focuses on economic causes of environmental problems. In particular, economic principles are applied to environmental questions and their management through variousEconomic institutions, economic incentives and other instruments and policies
	DSE-2 ECO-HE-6026	International Economics	This course develops a systematic exposition of models that try to explain the composition, direction and consequences of international trade, and the determinants and effects of trade policy. It concludes with an analytical account of the causes and consequences of the rapid expansion of international financial flows in recent years.

	DSE-3 ECO-HE-6036	The Economy of Assam	Syllabus yet to be prepared by the University

Subject: Education

PROGRAMME SPECIFIC OUTCOMES:

Specific outcome of Education major syllabus prescribed by Gauhati University may be cited below:

1. To understand the scientific foundational theories and principles of education.

2. To enable the students to understand the relation between education and psychology and different methods of educational psychology.

3. To acquaint the students with the development of education system in ancient, medieval, colonial and post-colonial period in India along with Assam.

4. To acquaint the students with education as a social process and how it can be understand from the social perspective.

5. To acquaint the learner with the emerging issues in education like different literacy programmes, women empowerment, Human rights, globalization, vocationalization of secondary education.

6. To help the students to acquire knowledge of the concept of measurement and evaluation in education and they will understand the different types of educational tests and their uses.

7. To enable the students to understand the concept and scope and objectives of Educational Technology like teaching technology, behavioral technology and instructional technology.

8. To enable the students to understand the concept, scope and importance of environmental education.

9. To acquire knowledge about the three major philosophies of education — Idealism, Naturalism and Pragmatism and to familarise with the Indian schools of philosophical thought — Vedic, Buddhist and Islamic thought.

10. To acquaint the students with the teaching learning process, the principles, maxims fundamental of teaching.

11. To enable the students to understand the basic concepts related to development psychology.

12. To enable the students to understand the concept of continuing education and Distance education and its relevance to the changing society.

13. To help the students to understand the meaning and importance of special education on persons with disabilities, education provisions and support services of special children.

14. To enable the students to understand the basic concepts of management, organization and administration.

COURSE OUTCOMES:

Semester	Course code	Course Name	Course outcome
I	EDU-HC-1016	Principles of Education	After completion of this course the learner will be able • To acquaint the students with the sound principles of education • To acquaint the students with the important concepts of Education, Curriculum, Democracy, Discipline and Freedom. • To develop knowledge about different Aims of Education, various types of Curriculum, Correlation of Studies and Forms of Discipline. • To familiarize the students with democratic idea of modern education. EDU-HC-1026 Psychological Foundations of Education • To make the students understand the relationship between education and psychology and the need of educational psychology in teaching learning process. • Describe the nature and theories of learning and role of motivation in learning. • Understand the concept of memory, forgetting, attention and interest. • Understand intelligence, its theories, measurement, and concept of emotional intelligence.
	EDU-HC-1026	Psychological foundations of Education & laboratory practical	
	EDU-HG-1016	Foundations of Education	• To acquaint with the principles of education • To gain knowledge about different various Forms and Aims of Education • To understand the concept and importance of Discipline and Freedom. • To acquire knowledge about the concept of Emotional and National Integration and International Understanding.
II	EDU-HC-2016	Philosophical and Sociological Foundations of Education	• Know the concept of philosophy and its relationship with education. • Understand the educational implications of different Indian schools of philosophy as well as different Western schools of philosophy. • Know the concept of sociology and its relationship with education and to develop the understanding about the concept of educational sociology, social groups and socialisation.
	EDU-HC-2026	Development of Education in India-	• Recount the concept of Ancient Indian education system • Describe the

		I	education system in Ancient India, particularly Vedic Education and examine the education system in Medieval India and education system during British Period
	EDU-HG-2016	Psychology of Adolescents	• To enable the students to understand the period of adolescence • To enable the students to understand the significance of the adolescence period in human life and to know about various problems associated with this stage • To enable the students to understand the development aspects of adolescence, importance of adolescence period and problems associated with this stage.
III	EDU-HC-3016	Development of Education in India-II	After completion of this course the learner will be able to: • Understand the Educational situation during the time of Independence • Explain the recommendations and educational importance of different Education Commission and Committees in post Independent India • Analyse the National Policy on Education in different tomes • Accustom with the recent Educational Development in India
	EDU-HC-3026	Educational Technology and Teaching Methods	After completion of this course the learner will be able to: • Make the students understand the objective of educational technology in teaching learning process • Acquaint the students with innovations in the field of education through technology • Make the students understand about various methods and devices of teaching • Acquaint students with levels, effectives of teaching and classroom management • Make the students understand the strategies of effective teaching as a profession.
	EDU-HC-3036	Value and Peace Education	After completion of this course the learner will be able to: • Understand the concept and meaning of value. • Become aware about the role of educational institutions in building a value based society. • Understand the meaning and concept of peace and its importance in human life. • Understand the meaning and importance of peace education and its relevance at national and international level.

			• Identify the different issues/ challenges in imparting peace education. • Identify the strategies and skills in promoting peace education at institutional level.
	EDU-HG-3016	Guidance and Counselling	After completion of this course the learner will be able to: • Help the students to understand the concept, need and importance of Guidance and Counselling • Enable the students to know the different types and approaches to Guidance and Counselling • Acquaint the students with the organization of guidance service and school guidance clinic • Enable the learners to understand the challenges faced by the teacher as guidance worker.
	EDU-SE-3014	Public speaking skill	After completing this course, students will be able to acquire the capacities of public speaking skill.
IV	EDU-HC-4016	Great Educational Thinkers	After completion of this course the learner will be able to: • Enable the students to learn the Philosophy of life of different Educational Thinkers and their works. • Enable the students to learn about the views of thinkers in educational context. • Enable the students to learn about relevance of some of their thoughts at present day context.
	EDU-HC-4026	Educational Statistics & Practical	After completion of this course the learner will be able to: • Develop the basic concept of Statistics, • Be acquainted with different statistical procedures used in Education. • Develop the ability to represent educational data through graphs. • Familiarize the students about the Normal Probability Curve and its applications in Education.
	EDU-HC-4036	Emerging Issues in Education	After completion of this unit, students will able to- • Make the students acquaint with major emerging issues national, state, and local • Acquaint the students with the various issues in education that are emerging in the recent years in the higher education system • Address the various problems and challenges

			of education in India at all levels.
	EDU-HG-4016	History of Education in India	After completion of this course the learner will be able to: • Analyse the education system during British Period • Understand the Educational situation during the time of Independence • Explain the recommendations and educational importance of different Education Commission and Committees in post Independent India • Analyse the National Policy on Education in different tomes • Accustom with the recent Educational Development in India.
	EDU-SE-4014	Writing biodata and facing an interview	After completing this course, students will be able to write a bio-data scientifically and will develop confidence to face different types of interview.
V	EDU-HC-5016	Measurement and Evaluation in Education & Laboratory Practical	After completion of this course the learner will be able to: • Enable the students to understand the concept of measurement and evaluation in education. • Acquaint the students with the general procedure of test construction and characteristics of a good test. • Develop an understanding of different types of educational tests and their uses. • Acquaint the students about personality test, and aptitude tests.
	EDU-HC-5026	Guidance and Counselling	After completion of this course the learner will be able to: • Help the students to understand the concept, need and importance of Guidance and Counselling • Enable the students to know the different types and approaches to Guidance and Counselling • Acquaint the students with the organization of guidance service and school guidance clinic • Enable the learners to understand the challenges faced by the teacher as guidance worker.
	EDU-HE-5016	Continuing Education	After completion of this course the learner will be able to: • Know the concept, objectives, scope and significance of continuing education in the context of present scenario.

			• Understand about different aspects and agencies of continuing education. • Realize different methods and techniques as well as issues of continuing education. • Know the meaning of open education and realise the importance of open school and open universities in continuing education. • Understand the development of adult education in India, kinds of adult education and different problems of adult education.
	EDU-HE-5026	Developmental Psychology	After completion of this course the learner will be able to: • Enable the students to understand the basic concepts relating to development • Acquaint the students about heredity and environmental factors affecting pre-natal development • Enable the students to understand the development aspects during infancy and childhood • Enable the students to understand the development aspects of adolescence, importance of adolescence period and problems associated with this stage.
	EDU-HE-5036	Human Rights Education	After completion of this course the learner will be able to: • Explain the basic concept, nature and scope of human rights • Describe the meaning, nature, principles, curriculum and teaching methods of human rights education at different levels of Education. • Know the role of United Nations on human rights • Understand enforcement mechanism in India • Know the role of advocacy groups
	EDU-HE-5046	Teacher Education in India	After completion of this course the learner will be able to: • Explain the Concept, Scope, Aims & Objectives and Significance of teacher education • Acquaint with the development of Teacher Education in India • Acquaint with the different organising bodies of teacher education in India and their functions in preparation of teachers for different levels of education • Acquaint with the innovative trends and recent issues in teacher education, and be

			able to critically analyse the status of teacher education in India • Understand and conceive the qualities, responsibilities and professional ethics of Teachers
VI	EDU-HC-6016	Education and development	After completion of this course the learner will be able to: • Relation between education and development • Educational development in the post globalization era • Role of education in community development • Education for human resource development • Economic and political awareness through education
	EDU-HC-6026	Project	After completion of this course the learner will be able to: • Explain the process of conducting a Project. • Prepare a Project Report.
	EDU-HE-6016	Mental Health & Hygiene	After completion of this course the learner will be able to: • Acquaint with the fundamentals and development of mental health and the characteristics of a mentally healthy person. • Understand the concept and importance of mental hygiene and its relationship with mental health. • Acquire knowledge about the principles, factors promoting mental health and the role of home, school, and society in maintaining proper mental health. • Learn the meaning and problem of adjustment and also the different adjustment mechanisms. • Familiarise with the concept and issues of positive psychology, mental health of women, role of WHO and stress management.
	EDU-HE-6026	Special Education	After completion of this course the learner will be able to • Understand the meaning ad importance of special education • Acquaint with the different policies and legislations of special education • Familiarise the students with the different types of special children with their characteristics • Enable the students to know about different issues, educational provisions and support services of special education

	EDU-HE-6036	Educational Management	After completion of this course the learner will be able to • Develop an understanding of the basic concept of educational management. • Enable the students to know about the various resources in education • Enable the students to understand the concept and importance of educational planning. • Enable the students to know about the financial resources and financial management in education.
	EDU-HE-6046	Women and Society	After completion of this course the learner will be able to • Know the changing role of women in India • Understand gender discrimination in Indian society • Make the students understand the constitutional provisions for women and their rights. • Make the students understand women empowerment • Develop an awareness and sensitivity towards women

History

PROGRAMME SPECIFIC OUTCOMES:

Specific outcome of History major syllabus prescribed by Gauhati University may be cited below:

1. To understand the meaning and scope of history and its relation with other disciplines.

2. The students will be acquainted with history of India according to its various phases like – Paleolithic, Mesolithic and Neolithic.

3. The students will understand the state-formation process under the Mauryas, Guptas etc.

4. Will be acquainted with the history of ancient civilizations of the world viz. Mesopotamia, Greece, Chinese, and Roman.

5. The students will understand the rise of Turks and Afghans in India and its affect on state, society and economy.

6. Will help the students to know the history of ancient medieval and modern Assam along with its various dynasties and their impact upon society, polity, economy etc.

7. Will help the students to know about advent of Mughal in India and expansion of their territory.

8. Will help the students to know about history of Europe and its transition from Medieval to modern age.

9. Will help the students to know about the arrival of the British in India and their expansion and consolidation.

10. Will help the students to understand the existence of science and technology in pre-colonial India

COURSE OUTCOMES:

Semester	Course code	Course Name	Course outcome
I	HIS-HC-1016	History of India- I	After the completion of this paper, the students will be able to explore and effectively use historical tools in reconstructing the remote past of ancient Indian pre and Proto history. The course will also train the students to analyse the various stages of evolution of human cultures and the belief systems in the proto- history period.
	HIS-HC-1026	Social Formations and Cultural Patterns of The Ancient World	After the completion of this paper, the students will be able to explain the Processes and stages of the evolution of the variety of cultural pattern throughout antiquarian Periods in History. 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.
II	HIS-HC-2016	History of India-II	On successful completion of this course the students will be able to Explain the economic and socio-cultural connections, transitions and stratifications during the
	HIS-HC-2026	Social Formations and Cultural Patterns of The Medieval World	After the completion of this course, the students will be able to analyse and explain the historical socio-political, administrative and economic patterns of the medieval world. They will be able to describe the emergence, growth and decline of various Politico-administrative and economic patterns and the resultant changes there.
III	HIS-HC-3016	History of India-III (c. 750 -1206)	The completion of this paper will enable the students to elate 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. They Will also be able to analyse India's interaction with another wave of foreign influence and the changes brought in its wake in the period.
	HIS-HC-3026	Rise of The Modern West-I	On completion of this course, the students will be able to explain the major trends and

			developments in the Western world between the 14th to the 16th century CE. They will be able to explore and analyse the significant historical shifts and events and the resultant effects on that period.
	HIS-HC-3036	History of India-IV civilizations of Europe in the period (c.1206 - 1550)	After completion of this course students will be able to explain the political and administrative history of medieval period of India from 1206 to 1550 AD. They will also be able to analyse the sources of history, regional variations, social, cultural and economic set up of the period.
IV	HIS-HC-4016	Rise of The Modern West – II	After the completion of this course, the student will be able to explain the political and intellectual currents in Europe in the Modern Age. 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.
	HIS-HC-4026	History of India V (c. 1550 – 1605)	At the completion of this course, 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. They will also be able to describe the inter relationships between the economy, culture and religious practices of the HIS-HC-4036: History of India VI period. (c. 1605 - 1750) After the completion of this course, the students will be able to explain and reconstruct the linkages of the history of India under the Mughal Rule. As a whole, this course will able them to relate to the socio-economic and religious orientation of the people of Medieval period in India.
V	HIS-HC-5016	History of Modern Europe- I (c. 1780-1939)	After the completion of this course the students will be able to evaluate the historical evolution and political developments that occurred in Europe in the period between 1780 and 1939. They will also be also to critically analyse the evolution of social classes, nation states, evolution of capitalism and nationalist sentiment in Europe. They will also be able to relate to the variety of causes that dragged the world into
	HIS-HC-5026	History of India VII devastating wars in the intervening period (c. 1780 - 1857)	After the completion of this course, the students will be able to relate the circumstances leading to the consolidation of colonial rule over India and their consequences. They will also be able to

			explain the orientation of the indigenous population and the masses towards resistance to the colonial exploitation. The course will also enable the students to analyse popular uprisings among the tribal, peasant and common people
VI	HIS-HC-6016	History of India VIII against the British policies. (c. 1857 – 1950)	On the completion of this course, the learners will be able to analyse the course of British colonial exploitation, the social mobilizations during the period between C.1857 to 1950 and also the techniques of Indian resistance to British policies. It will also enable the students to explain the circumstances leading to decolonization and also the initial period of nation
	HIS-HC-6026	History of Modern building in India. Europe II (c. 1780 - 1939)	After the completion of this course, the students will be able to analyse the historical developments in Europe between c.1780 to 1939. As the course structure of this paper focuses on the democratic and socialist foundations modern Europe, the students will be able to situate the historical development of working class movements, socialist upsurge and the economic forces of the two wars and the other ideological shifts of Europe in the period.

Subject: Philosophy

PROGRAMME SPECIFIC OUTCOMES:

Specific outcome of Philosophy major syllabus prescribed by Gauhati University may be cited below:

- The programme helps students to analyze the ways in which humans experience the world and to develop a sense of value.
- The study of philosophy is intrinsically as well as extrinsically valuable. The students of philosophy can develop the ability in critical thinking skills.
- They understand the concept of right and wrong, understand the moral principles and their 20 application in everyday life.
- They develop the ability to summarize and explain difficult ideas and concepts in their own.
- The students also develop the ability to understand reality from different perspectives and examine different sides of an issue as well as students learn to improve their analytical writing skills through this programme.
- The programme helps student to develop the creative and independent thinking.
- The student of philosophy develops ability in research methodology, specifically stating and defending a clear and substantive thesis.

- The programme helps student to carefully and insightfully analyzed argument, rhetoric expressed in various media like print, television, radio and social media.

COURSE OUTCOMES:

Semester	Course code	Course Name	Course outcome
I	PHI-HC-1016	Indian Philosophy-I	Indian philosophy has been concern with various philosophical problems such as nature of the world, nature of reality, nature of knowledge, logic, ethics and the philosophy of religion. Indian philosophy creates awareness about the spiritual aspects of individual as well as ancient philosophical traditions of India.
	PHI-HC-1026	Logic- I	Logic helps students to clarify thought process and make correct reasoning. Also Modern or Symbolic Logic gives us the knowledge of the formal techniques of evaluating arguments and deductive systems.
II	PHI-HC-2016	Greek Philosophy	As Greek philosophy deals with wide variety of subjects like political philosophy, ontology, aesthetic etc, it helps a student to know about the origin of philosophy and cultural.
	PHI-HC-2026	Logic II	Logic helps students to clarify thought process and make correct reasoning. Also Modern or Symbolic Logic gives us the knowledge of the formal techniques of evaluating arguments and deductive systems.
III	PHI-HC-3016	Western Philosophy (Descartes to Hegel)	Student will learn about rationalism, empiricism, kant and hegel philosophy.
	PHI-HC-3026	Indian Philosophy-II	Indian philosophy has been concern with various philosophical problems such as nature of the world, nature of reality, nature of knowledge, logic, ethics and the philosophy of religion. Indian philosophy creates awareness about the spiritual aspects of individual as well as ancient philosophical traditions of India.
	PHI-HC-3036	Ethics	Through the study of ethics an individual can look upon his life critically evaluate his actions and make decisions freely. It gives us the knowledge of ethical theory with the help of which we can apply it to specific discipline or issues including business, science, medicine and technology etc.
IV	PHI-HC-4016	Contemporary Indian Philosophy	Through the study of Contemporary Indian Philosophy students are acquainted with the humanistic approach of life and philosophy.

			With the help of which they become aware about the reconciliation between the forces of tradition with the concept of modernity.
	PHI-HC-4026	Philosophy of Religion	Philosophy of Religion help students to analyze philosophically various religious points of view and at the same time the study of comparative religion brings tolerant attitude in one's life.
	PHI-HC-4036	Social and Political Philosophy	The study of Social Philosophy makes a student aware about their social behaviours, duties and responsibilities etc. as well as the study of political philosophy allows student to examine the complex nature of political power. By studying Political Philosophy student can know what makes a government legitimate, what rights and freedoms it should protect, what form it should take etc.
V	PHI-HC-5016	Analytic Philosophy	Analytic philosophy which is also called as a Linguistic Philosophy is based on the idea that the philosophical problems can be solved through the analysis of their terms in a pure and systematic logic.
	PHI-HC-5026	Phenomenology and existentialism	Phenomenology is the study of structures of consciousness as experiences from the first person point of view as well as it is related to under key discipline in philosophy, such as ontology, epistemology, logic and ethics. The study of Existentialism helps student to know about the man_s existence, freedom, emotion, action etc. It helps student to develop a consistent scale of values, authenticate their existence by being committed these values. As a philosophical trend it also helps students to construct a systematic thought.
VI	PHI-HC-6016	Philosophy of mind (Western/Indian)	From the study of Philosophy of Mind students can know the philosophical study of the nature of mind, mental events, mental functions, mental properties and consciousness and of the nature of their relationship with the physical body.
	PHI-HC-6026	Meta Ethics	Through the study of Meta Ethics student can know the connection between values, reason for actions, human motivation, etc. which address many of the issues commonly bound up with the nature of freedom and its significant.

Subject: Political Science

PROGRAMME SPECIFIC OUTCOMES:

Specific outcome of Political Science major syllabus prescribed by Gauhati University may be cited below:

1. Political science as a subject acquainted the students to understand various theories of political science and its history and approaches, and an assessment of its critical.

2. The study of political Science will help the students to know about the constitution of India and how the constitutional provisions are applied in the administrative system of the country. It helps them to know the various rights and Duties of the Citizen.

3. Political Science is useful to understand the mechanisms of modern governmental systems.

4. The subject enables the students to understand the various theories of International Relations and dynamics involved with it. The study of Political Science is also useful for understanding both national and international foreign policies.

5. Political science also deals with various ideals like Rights, Justice, Liberty, Equality, etc.

6. The subject is also helpful in inculcating democratic values, good citizenship, etc.

7. With the help of studying Political Science students will able to understand prevailing political culture in a political system and thereby they get themselves acquaint with the political process of the political system.

8. The study of Political Science is helpful in understanding the political development that takes place in a particular political system.

9. The students get themselves aware about the Human Rights, working of various International Organisations in different field of Human Development through the study of Political Science.

10. The subject imparts the lesson of co-operation and toleration among the students.

11. This subject introduces students to the key debates on the meaning and nature of globalization by addressing its political, economic, social and cultural and technological dimension.

12. The subject provides an introduction to the discipline of Public Administration. It encompasses public administration in its historical context with an emphasis on various classical and contemporary administrative theories.

13. The subject enables the students to understand the political philosophy of the Indian and western political thinkers and their applicability in present context.

14. The subject provides the knowledge of contemporary political Ideologies and issues in the global context the student.

COURSE OUTCOMES:

Semester	Course code	Course Name	Course outcome
I	POL-HC-1016	Understanding Political Theory	The course syllabus is divided into two sections. Section A deals with the idea of political theory, its history and approaches, and an assessment of its Critical and contemporary trends. On the other hand, Section B is designed to reconcile political theory and Practice through reflections on the ideas and practices related to democracy

	POL-HS-1026	Constitutional Government and Democracy In India	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 the 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.
II	POL-HC-2016	Political Theory Concepts and Debates	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.
	POL-HC-2026	Political Process in India	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.
III	POL-HC-3016	Introduction to Comparative Government and Politics	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.
	POL-HC-3026	perspectives	The course provides an introduction to the

		on public administration	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.
	POL-HC-3036	Perspectives on International Relations and World History	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.
IV	POL-HC-4016	Political Processes and Institutions in Comparative Perspective	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.
	POL-HC-4026	Public Policy and Administration in India	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.
	POL-HC-4036	Global Politics	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.
V	POL-HC-5016	Classical Political Philosophy	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.
	POL-HC-5026	Indian Political Thought-I	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.
VI	POL-HC-6016	Modern Political Philosophy	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.
	POL-HC-6026	Indian Political Thought-II	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.

Sanskrit

PROGRAMME SPECIFIC OUTCOMES:

Specific outcome of Sanskrit major syllabus prescribed by Gauhati University may be cited below:

2. It gives importance on the inheritance of great cultural heritage of India, which gives a broader vision to the learners to understand their life.
3. The syllabus gives an overall idea of Sanskrit literature and provides the students the information of History of Sanskrit literature.
4. It acquaints the learners with the preliminary concepts of various disciplines like the Vedic literature, Epic literature, Philosophy, Medical science, Vedic Mathematics, Vastu Sastra, Poetics, etc.
5. The knowledge of Philology gives opportunity to the learners to know the linguistic patterns as well as socio-cultural conditions of various linguistic groups.
6. It prepares the students to face the examination and the challenges of real life aswell.
7. The information and knowledge, incorporated in the ancient texts inspire the students for interdisciplinary research activities, which lead to the sustainable development of thenation.
8. It acquaints the learners with the technical and scientific literature in Sanskrit. The technical literature comprises Poetics, Rhetoric, Prosody, etc.
9. The lessons on Sanskrit Grammar give a solid foundation to learn the structure of Sanskrit language.
10. The learners are acquainted with the basic information on Computer.
11. It possesses all the potentialities to develop human resources as it inculcates the spirit of ethical values, which is considered to be the foundation of Sanskritculture.

COURSE OUTCOMES:

Semester	Course Code	Course Name	Course Outcome
I	SKT- HC-1016	Classical Sanskrit Literature (Poetry)	1. This course aims to get students acquainted with Classical Sanskrit Poetry. 2. This course provides the students the information of History of Sanskrit literature, especially the development of Sanskritliterature. 3. The course also seeks to help students to negotiate texts independently.
	SKT- HC-1026	Critical Survey of Sanskrit Literature	1. This course aims to get acquaint the students with the journey of Sanskrit literature from Vedic literature to Purāṇa. 2. It also intends to give an outline of different Śāstric traditions, through which the students will be able to know the different genres of Sanskrit Literature and Śāstras.
II	SKT-HC-2016	Classical Sanskrit Literature (Prose)	This course aims to acquaint students with comprehensive information of Classical Sanskrit Prose literature. Origin and development of prose, Important prose romances and fables Sanskrit, etc., have also been included here to acquaint the students with the history of Sanskrit Prose literature. 2. Besides the information of history this course also seeks to help students to select the Sanskrit texts for independent literary study.
	SKT-HC-2026	Self-Management in the Gītā	1. The objective of this course is to study the philosophy of self-management in the Śrīmadbhagavadgītā. 2. This course helps the students for creative writing and analytical study. 3. This also guides the students to find out the relevance of Śrīmadbhagavadgītā in present context. 4. It helps the students to understand the broader perceptive of life. 5. It helps the students to knowvarious ways of maintaining balance between thought and action.
III	SKT-HC-3016	Poetics and literary criticism	1. This course aims to acquaint students with three most famous dramas of Sanskrit literature which represent three stages in the growth of Sanskrit drama. 2. Mudrārāksasa of Viśakhadatta is a drama, written on the political background which acquaints the students with a different genre of Sanskrit drama.

	SKT-HC-3026	Poetics and literary criticism	1. The study of Sāhityaśāstra (Sanskrit Poetics) embraces all poetic arts and includes concepts like alaṁkāra, rasa, rīti, vakrokti, dhvani, aucitya etc. The entire domain of Sanskrit poetic has flourished with the topics such as definition of poetry and divisions, functions of word and meaning, theory of rasa and alaṁkāra (figures of speech) and chandas (metre), etc. All these familiarize the students with the fundamental technical structures of Sanskrit literature. 2. This develops capacity for creative writing and literary appreciation.
	SKT-HC-3036	Indian Social Institutions and Polity	Social institutions and Indian Polity have been highlighted in Dharma-śāstra literature. The aim of this course is to make the students acquainted with various aspects of social institutions and Indian polity as propounded in the ancient Sanskrit texts such as Saṁhitās, Mahābhārata, Purāṇa, Kauṭilya's Arthaśāstra and other works known as Nītiśāstra.
IV	SKT-HC-4016	Indian Epigraphy, Paleography and Chronology	1. This course aims to acquaint the students with the epigraphical journey in Sanskrit, the only source which directly reflects the society, politics, geography and economy of the time. 2. The course also seeks to help students to know the different styles of Sanskrit writing.
	SKT-HC-4026	Modern Sanskrit Literature	1. The purpose of this course is to expose students to the rich & profound tradition of modern creative writing in Sanskrit, enriched by new genres of writing.
	SKT-HC-4036	Sanskrit and World Literature	1. This course is aimed to provide information to students about the spread & influence of Sanskrit literature and culture through the ages in various parts of the world in medieval & modern times.
V	SKT-HC-5016	Vedic Literature	1. This course on Vedic literature aims to introduce various types of Vedic texts. Students will also be able to read one Upaniṣad, namely, Muṇḍaka, where primary Vedānta-view is propounded.
	SKT-HC-5026	Sanskrit Grammar	To acquaint the students with general Sanskrit Grammar.
VI	SKT-HC-6016	Ontology and Epistemology	1. This course aims to get the students acquainted with the cardinal principles of the Nyāya-Vaiśeṣika philosophy through the Tarkasaṁgraha and to enable students to handle philosophical texts in Sanskrit. 2. It also intends to give them an understanding of essential aspects of Indian Philosophy.

	HC-6026	Sanskrit Composition and Communication	1.This paper aims at teaching composition and other related information based on Laghusiddhāntakaumudī Vibhaktyartha Prakarana.

DEPARTMENT OF GEOGRAPHY

PROGRAMME SPECIFIC OUTCOMES:

1. The programme makes the students to be more acquainted with data collection and data analysis procedures and it infuses ability to convert the data in to information.
2. Students are well versed with the surveying and map making techniques in different fields of geography using instruments like theodolite, dumpylevel and prismatic compass, etc.
3. Students are able to get better knowledge and understanding about the planet earth.
4. Students of geography can acquire the skill of universal brotherhood.
5. They are acquainted with modern technologies like remote sensing, Geographical Information System and Global Positioning System.
6. It enhances the ability to handle the real world problems and provide with better solution through critical analysis.

Semester	Course Code		Course Outcome
I	GGY - HC – 1016	Geomorpholog y	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 as 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 in different areas.
	GGY-HC-1026	Cartographic Techniques	●Understandingtheimportanceofvariouscartographictechniqu esingeographicalstudy ● General understanding of map type, map scale and map content. ● An acquaintance of different cartographic techniques for representation of various facets of physical and human geographic data of any area.
II	GGY-HC– 2016	Human Geography	●The paper will be useful for students in developing ideas on human-environment issues that geographers usually address in the anthropocene ● The paper will be useful for students preparing for UGC NET/SLET exams and other competitive exams including the civil services.
	GGY-HC-2026	Climatology and Biogeography	The paper will be useful for students in developing ideas on climate related aspects of geographical analyses. ● The paper will help provide theoretical insights and perspectives to students if they wish to pursue a research programme in future. ● 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.
III	GGY-HC-3016	Economic Geography	The paper will be useful for students in developing ideas on how geographical aspects organise economic space and will offer perspectives to students if they wish to pursue a researchprogramme. ● The paper will be useful for students preparing for UGC NET/SLET exams and other competitive exams including the civil services
	GGY-HC-3026	Geography of India	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 various competitive examinations including civil services.
	GGY-HC-3036	Quantitative Methods in Geography	Thorough understanding of the statistical methods and techniques used in geographical studies; ● Understanding of tabulation, analysis and interpretation of geographical data
IV	GGY-HC-4016	Environmental Geography	● This paper will be useful for students in developing ideas on environmental issues including disasters that geographers usually address. ● This paper will be useful for students preparing for different competitive exams including the civil services.
	GGY-HC-4026	Population and Settlement Geography	The paper will be useful for students in developing ideas about spatio-temporal changes in the characteristics of population and settlement and the factors associated with them. ● The paper will be useful for students preparing for various competitive exams including the civil services.
	GGY-HC-4036	Remote Sensing, GIS and GPS	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 different competitive exams including the civil services.
V	GGY-HC-5016	Social and Political Geography	This course will help equip the students to comprehend various social and political aspects of phenomena and their interface within the realm of geography. • The paper will be very useful for students preparing for various competitive examinations including civil services.
	GGY-HC-5026	Field Techniques in Geography	This course will help students to proceed with a research problem and the steps she/he should adopt and the tools and craft to be employed for doing quality research. ● Students perceive fieldwork to be beneficial to their learning, because through it they experience ‘geographical reality’, and have deeper understanding of the subject. ● The students will have a chance to interact with respondents and collect data through questionnaire directly from the field. ● This course will develop understanding about designing and writing a field report.
	GGY-HE-5036	Urban Geography	The paper will be useful for students in developing ideas on how geographical factors organize urban spaces and how geographers seek to address various urban problems and issues. • It will help build skills among students seeking advanced studies on urban development and planning. • The paper will be very useful for students preparing for various competitive examinations including civil services.
	GGY-HE-5046	Agricultural	This paper will be useful for students in developing ideas

		Geography	about agricultural practices and their distribution and characteristics. • This paper will also be useful tothe students in understanding the world agricultural systems. • This paper will help develop understanding of location of agricultural activities and associated contemporary problems and challenges.
VI	GGY-HC-6016	Geographical Thoughts	This course develops a comprehensive understanding of the discipline; • This course helps the students to apply the historic and contemporary perspective to explain and approach the real world geographic problems.
	GGY-HC-6026	Research Methods in Geography	This course will help the students to proceed with a research problem and the steps she/he should adopt and the tools and craft to be employed while doing quality research.
	GGY-HC-6036	Geography of Tourism	The paper will be useful for students in developing ideas on how geographical factors tangent on tourism activities and how geographers seek to address issues of development and carrying capacities of varied environments. • It will also build skills for students seeking to enroll in a research programme and/or provide openings for them to work with tourism/eco-tourism planning agencies.
	GGY-HC-6046	Geography of Resources and Development	This paper will be useful to students in developing ideas on different aspects of resources, and the linkages with development issues that geographers usually address. ● This paper will also be useful for students preparing for different competitive examinations including the civil services.

DEPARTMENT OF COMPUTER SCIENCE & IT

BCA

PROGRAMME SPECIFIC OUTCOMES:

The completion of the BCA Programme shall enable a student to:

i) To communicate technical information both orally and in writing

ii) Apply the knowledge gained in core courses to a broad range of advanced topics in computer science, to learn and develop sophisticated technical products independently.

iii) To design, implement, and evaluate computer-based system, process, component, or program to meet desired needs by critical understanding, analysis and synthesis

iv) Identify applications of Computer Science in other fields in the real world to enhance the

career prospects

v) Realize the requirement of lifelong learning through continued education and research.

vi) Use the concepts of best practices and standards to develop user interactive and abstract application

vii)Understand the professional, ethical, legal, security, social issues and responsibilities

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