

M.C. College, Barpeta

(Affiliated to Gauhati University)

PROGRAMME OUTCOME, PROGRAMME SPECIFIC OUTCOME & COURSE OUTCOME

Programme outcome for Bachelor of Arts:

- After completing the B.A. course a student is expected to achieve the below mentioned Programme Outcome
- 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 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 understand the basic concepts, fundamental principles, and various theories in the taught subjects.
- A student should realize the importance of literature in terms of the aesthetic, mental, moral, and intellectual development of an individual and accordingly of society.
- A student should understand how issues in social science get influenced by the literature and how the literature can provide solutions to social issues.

SUBJECT: ASSAMESE

PROGRAMME SPECIFIC OUTCOME

Specific outcome of Assamese 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 —Kirtonghosall, —Bargeet||, —Ankiya Nat|| etc, not only strengthen the religion but also create awareness among the learners to fight against the social evils like casteism, 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 OUTCOME

Semester	Paper Code	Paper Title	Course Outcome
I	ASM - HC – 1016	History of Assamese literature- (Charyapada – Sankari age)	They will know about History of Assamese Literature, Pre Sankar Era and Sankar Era
	ASM - HC – 1026	History of Assamese Literature – (Uttar Sankari age, orunodoi age)	A Clear idea about Sarit Sahitya, History, Pre Orunodoi, and Orunodoi Era. Also about the writer of Orunodoi Literature
	ASM - HG – 1016	Recitation	They will learn the theoretical and practical knowledge of Recitation
II	ASM – HC– 2016	Introduction to Language	Students can learn about the formation of 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.
	ASM-HG-2016	Adaptation	They will learn the theoretical and practical knowledge Adaptation, its importance and relevance
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
	ASM – HG– 3016	Assamese Drama And Theatre Art	They will learn the theoretical and practical knowledge of Assamese Drama and Theatre Art
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 non-Aryan 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.
	ASM – HG– 4016	Modern Assamese Lyrical Literature	They will learn about the Modern Assamese Lyrical Literature and its development
	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, Pre- independence and post-independence age. Again, they

V			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.
	ASM – HE– 5036	Sankardev	They will know about the contribution of Sankardev to the Assamese society and culture
	ASM – HE– 5046	Assamese Science Fiction	They will learn about the Assamese Science Fiction and its importance in the modern and ancient literature
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.
	ASM – HE– 6036	Assamese children Literature	Though this paper student can learn about the Assamese children Literature and their importance and relevance
	ASM – HE– 6046	Assamese Dialectology	Though this paper student can learn about the Assamese Dialect and Dialect used in Assamese Literature
	ASM-HE-6056	Project Paper	The students will learn about data interpretation and identification of the research problem

SUBJECT: ANTHROPOLOGY
PROGRAMME SPECIFIC OUTCOME

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

- The programme enabled the UG level students of Anthropology to introduce and understand the concept of Anthropology and develop interest in the ability to apply the theories and thought of the subject .
- To understand the inter- disciplinary nature of Anthropology students will be aware of the fields in Anthropology and variation , social and cultural aspect of man, prehistoric life ways of man .
- The aim of the programme is to impart essential theoretical knowledge of biological Anthropology such as basics of human evolution and variation , social and cultural aspect of man .
- The course help to know the applications of anthropology and developing the problem solving aptitude of the students.

COURSE OUTCOME

Semester	Paper Code	Paper Title	Course Outcome
I	ANT - HC – 1016	Introduction to Biological Anthropology	The course gave knowledge about the uniqueness of the different branches of Anthropology as well as about the anthropological knowledge of the contemporary world. Besides that the students will learn about the genetics and development of biological aspects of mankind such as human anatomy, anthropometry etc. which ultimately helps to trace the origin and evolution of mankind.
	ANT - HC – 1026	Introduction to Socio-Cultural Anthropology	The Course is meant to study the conceptual and theoretical knowledge of social-cultural anthropology along with practical knowledge of data collection and interpretation.
II	ANT – HC– 2016	Archaeological Anthropology	The course helps to know the prehistoric and archaeological background of evolution, variation and continuity of human society and culture. Moreover students will learn about the stages of human evolutionary and the fossil finds, archaeological background of prehistoric and historical cultures through tool technology and pottery technology.
	ANT – HC– 2026	Fundamentals of Human Origin and Evolution	The course is providing to impart the conceptual and theoretical knowledge of the evolutionary stages of man and the evolutionary development. Moreover students will learn on about the fossil finds on the basis which the evolutionary stages of man on the basis of which the evolutionary n stages of

			mankind are identified.
III	ANT – HC– 3016	Tribes and Peasants in India	The course helps to identify about the anthropological knowledge of tribes, villages and peasantry of India and policies by the government to address the problems, prospects and development of the tribes, village and peasantry. For ethnographical knowledge students will prepare a field- report on critical analysis of tribe and peasant of contemporary available resources.
	ANT – HC– 3026	Human Ecology: Biological and Cultural Dimensions	The course is helpful in knowing about the human adaptation in the ecological setting and on urbanization and industrialization process .The students will learn about the various modes of human adaptation and the bio-cultural adaptation to environmental influence of heredity.
	ANT – HC– 3036	Biological Diversity in Human Population	Its a course about the science of biological diversity in human population The student will learn about markers for understanding biological diversity for classifying human races
IV	ANT – HC– 4016	Theories of Culture and Society	The aim of the course is to study culture and society especially theoretical perspective of culture such as evolutionary theory, diffusion, historical particularism functionalism, cultural and personality, neo-evolution etc. As a part of practical exercise student will collect data and analyse it for proper understanding of the subject.
			It's a course about the science of

	ANT – HC– 4026	Human growth and Development	growth of human from foetus into man. Besides that student will study the concept related with growth and different stages of growth including bio-culture factors that influence growth and development, human body composition. The student should be trained to assess growth status of individual.
	ANT – HC– 4036	Research Methods	The students will get a basic understanding on research design formulation, field work tradition, methods and techniques of data collection and ethics of research. The student will learn about application of methods and techniques of data collection, the ethics of research for an effective study.
V	ANT – HC– 5016	Human Population Genetics	The students will get training in understanding about the mechanism which creates variation in gene frequencies and how ecological factors help for maintaining gene frequencies. Besides that students will also learn about ABO blood grouping, Testing colour blindness and PTC test.
	ANT – HC– 5026	Anthropology in Practice	The course is designed to learn about the history and development of Anthropology in India, the ethnic elements of North East India and the diversity in India. Besides that the students will visit a NGO and write a project report.
	ANT – HC– 6016	Forensic Anthropology	The course aims an advanced study of the forensic aspect of Anthropology. Students will learn about distinguishing human and non-human skeletal remains and the techniques of personal identification. Besides that students will learn about estimation of age,

VI			sex and stature from bones, somatometric, somatoscopic, and examination of fingerprint and hand writing.
	ANT – HC– 6026	Anthropology of India	The course is meant to understand the social, linguistic and ethnic dimension of Indian society constantly acting on it over the years. The student will be familiar with the Anthropological situation of the country.

SUBJECT: ECONOMIC
PROGRAMME SPECIFIC OUTCOME

Specific outcome of Economics 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 OUTCOME

Semester	Paper Code	Paper Title	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
	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

III	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 post-Independence 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.
	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.
	ECO-HE-5026	Money and Financial Market	This course exposes students to the theory and functioning of the monetary and financial 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.
	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	<p>This course examines sector-specific policies and their impact in shaping trends in key economic indicators in India. It highlights major policy debates and evaluates the Indian empirical evidence.</p> <p>Given the rapid changes taking place in the country, the reading list will have to be updated annually.</p>
	ECO – HC– 6026	Development Economics II	<p>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.</p> <p>The course ends with reflections on the role of globalization and increased international dependence on the process of development</p>
	ECO – HE– 6016	Environmental Economics	<p>This course focuses on economic causes of environmental problems. In particular, economic principles are applied to environmental questions and their management through various Economic institutions, economic incentives and other instruments and policies</p>

	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.
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SUBJECT: EDUCATION

PROGRAMME SPECIFIC OUTCOME

Specific outcome of Education 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 understood 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 familiarise 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 OUTCOME

Semester	Paper Code	Paper Title	Course Outcome
I	EDU-HC-1016	Principles of Education	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 - HG – 1016	Foundations of Education	<ul style="list-style-type: none"> • 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, National Integration and

			International Understanding.
II	EDU – HC– 2016	Philosophical and Sociological Foundations of Education	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Recount the concept of Ancient Indian education system • Describe the 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	<ul style="list-style-type: none"> • 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 learners will be able to understand the educational situation during the time of independence; Explain the recommendations and educational importance of different educational commission and committees in Post- Independent India; Analyze the National Policy on Education in different times; Accustom themselves with the recent educational development in India.
	EDU – HC– 3026	Educational technology and teaching methods	After completion of this course the learners will be able to: Understand the objective of educational technology in teaching learning process; Know about the innovations in the field of education through technology; Understand about various methods and devices of teaching; Acquaint themselves with levels, effectiveness of teaching and classroom management; Understand the strategies of effective teaching as a profession.
	EDU – HC– 3036	Value and peace education	After completion of this course the learners will be able to: Understand the meaning and concept of value, peace, and its importance in human life; Understand the meaning and importance of peace education and its relevance at national and international Level; Identify different issues in imparting peace education; Identify strategies and skills in promoting peace education at institutional level.
	EDU – HG– 3016	Guidance and Counselling	After completion of this course the learners will be able to: Understand the concept, need and importance of guidance and counselling; Know the different types and approaches to guidance and counselling; Acquaint themselves with organization of guidance service and school guidance clinic; Understand the challenges faced by

			the teacher as guidance worker.
	EDU-SE-3014	Public Speaking Skill	After completion of this course the learners will be able to acquire the capacities of public speaking skill.
IV	EDU – HC– 4016	Great Educational Thinkers	The course outcome of this paper is – To enable the students to learn the Philosophy of life of different Educational Thinkers and their works; to enable the students to learn about the views of thinkers in educational context; to enable the students to learn about relevance of some of their thoughts at present day context.
	EDU – HC– 4026	Educational Statistics And Practical	After the 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	The course outcome of this paper will be to Make the students acquaint with major emerging issues of national, state, and local level; 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-RC-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 biodata scientifically and will develop confidence to face different types of interview.
V	EDU – HC– 5016	Measurement and evaluation in education & practical	The course outcome of this paper is 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	The course outcome of this paper will be 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-DSE-5026	Developmental Psychology	The course outcome of this paper will be 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-DSE-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.
	EDU-DSE-5026	Developmental psychology	The course outcome of this paper will be 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 – HC– 6016	Education and development	After completion of this course the learner will be able to understand: 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

VI	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 – DSE– 6016	Mental health and 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; Familiarize with the concept and issues of positive psychology, mental health of women, role of WHO and stress management.
	EDU-DSC-6036	Educational Management	The course outcome of this paper will be 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-DSE-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
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SUBJECT: ENGLISH

PROGRAMME SPECIFIC OUTCOME

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

1. The Indian and other literature like European, British etc. provide the students the adequate platform to understand various types of literature and culture.
2. The Classical Literature provides a broader view of the literatures of the world, and the possibility of cultural exchange.
3. The modern English literature focuses on the latest developments in the field of literature from around the world.
4. 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.
5. The syllabus offers a wide variety of optional papers enabling the learners come to know the interrelation of life with literature.
6. 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	Paper Code	Paper Title	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

			<p>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.</p>
	ENG – HC– 2026	British Poetry and Drama	<p>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.</p>
III	ENG – HC– 3016	American Literature	<p>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.</p>

	ENG – HC– 3026	Popular Literature	This paper will enable the students to understand the nature of —Popular literature as a genre and the critical ideas underpinning the theorization of popular literature as well as how it has moved from the margins to earn for itself a fairly important place in the literary and critical consciousness.
	ENG – HC– 3036	British Poetry and Drama: 17th and 18th Centuries	This paper will familiarize the students with British literature in the 17th and 18th centuries, a time-period which sees the emergence and establishment of greatly diverse kinds of writings. The selected texts 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.
			This paper will familiarize the students with the 19th century triumph of the Romantic

	ENG – HC– 4026	British Romantic Literature	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 ground-breaking efforts of the poets as well to the works of fiction writers who manage to consolidate and refine upon the achievements of the novelists of the previous era. 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.
	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.
V	ENG – HC– 5026	Womens' 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.
	DSE 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 Detective Literature	This paper will enable the students to explore the ways in which new narrative possibilities have emerged due to the human fascination for crime, mystery and improbable occurrences.
VI	ENG – HC– 6016	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– 6026	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.
	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 indispensable part of English literature, both in terms of its contribution to its richness as well as an avenue for humans 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

SUBJECT: GEOGRAPHY

PROGRAMME SPECIFIC OUTCOME

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

The students graduating in geography will be immensely benefitted with following skills:

- The programme will enrich and enlighten the students with fundamental geographical understanding to chase higher education in the discipline.
- The programme will prepare the students with adequate knowledge applicability and problem solving capacities.
- The programme will provide encouragement among students to pursue a career in Geoinformatics in future.
- The programme deals with project work and preparation of dissertation which will promote research work and research profession among the students.
- The programme will build a sound geographical base in the students which will immensely help them while preparing for any competitive exams.
- The programme deals extensively on environment and man-nature relationship. This will create a sense of awareness and social responsibility among the students towards the environment.
- Most importantly, the programme will help students to become better and responsible citizens of the nation.

COURSE OUTCOME

Semester	Paper Code	Paper Title	Course Outcome
I	GGY - HC – 1016	Geomorphology	<ul style="list-style-type: none"> • To provide a general idea about the topographic and surfacial characteristics of the earth's surface to the students. • To make the students aware of the dynamic geomorphic processes responsible for the development of landforms of varied types and nature. • To apply scientific knowledge on landform development based on geomorphic concepts, principles and theories. • 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.
			<ul style="list-style-type: none"> • The Cartographic Techniques provides a general understanding of the field of cartography

	GGY - HC – 1026	Cartographic Techniques	<p>including its modern developments and importance in geographic study.</p> <ul style="list-style-type: none"> • It more particularly focuses on various types of map scale and their construction; principles of map projection and construction of selected few; and preparation of thematic maps through the representation of various geographical data using different cartographic techniques. • Understanding the importance of various cartographic techniques in geographical study. • General understanding of map type, map scale and map content. • An acquaintance of different cartographic techniques for representation of various facets of physical and human geographic data of any area.
II	GGY – HC– 2016	Human Geography	<ul style="list-style-type: none"> • The paper intends to introduce students to human geography and how humankind transforms and gets transformed by geographic space. • It seeks to develop new insights among students on the relevance of humanenvironmental relationships and how a spatial perspective shapes these relationships. • The subject will be useful for students in developing ideas on human-

			environment issues.
	GGY – HC– 2026	Climatology and Biogeography	<ul style="list-style-type: none"> • This paper is a core paper that intends to introduce students to the rationale underlying climatological studies in geography. • It seeks to develop new insights among students on the relevance of climatic variables on climate change. • This paper intends to develop an understanding in the physical and human factors responsible for the distribution, conservation, and restriction of living organisms on the earth surface. • 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.
III	GGY – HC– 3016	Economic Geography	<ul style="list-style-type: none"> • This is a core paper that intends to introduce students to the principles of economic geography and associated patterns and processes of major economic activities in the world. • It seeks to develop new insights among students on the relevance of economy geography and associated problems in contemporary times.

			<ul style="list-style-type: none"> • 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 research programme.
	GGY – HC– 3026	Geography of India with special reference to N.E. India	<ul style="list-style-type: none"> • This is a core paper which intends to introduce students to India as a geographical entity. • It seeks to develop new insights among students on significant geographical dimensions of the country along with its north-eastern part. • A field study is incorporated to make the students understand regional diversity of • India with respect to its land, people and economy. • The paper will be useful for students in developing understanding on Indian geography and its various dimensions.
	GGY – HC– 3036	Quantitative Methods in Geography	<ul style="list-style-type: none"> • The paper Quantitative Methods in Geography throws light on the importance of data in geography. It deals with the methods and techniques of data collection, data tabulation, data interpretation and analysis through the application of some basic statistical measures. • This paper provides an understanding of the pure and applied nature of geography along with the key elements in the discipline. • Thorough understanding of the statistical methods and

			<p>techniques used in geographical studies;</p> <ul style="list-style-type: none"> • Understanding of tabulation, analysis and interpretation of geographical data.
	GGY-SE-3054	Thematic Cartography	<ul style="list-style-type: none"> • This course on Cartographic Methods provides a general understanding of the field of cartography including its modern developments and importance in geographic study. • It more particularly focuses on various types of map scale and their construction; principles of map projection and construction of selected few; and preparation of thematic maps through the representation of various geographical data using different cartographic techniques and methods. • Understanding the importance of various cartographic techniques in geographical study. • General understanding of map type, map scale and map content. • An acquaintance of different cartographic techniques for representation of various facets of physical and human geographic data of any area
	GGY – HC– 4016	Environmental Geography and Disaster management	<ul style="list-style-type: none"> • This paper is a core paper that intends to introduce students to geography and environment interface. • It seeks to develop new insights among students on the relevance of environmental studies from a spatial perspective.

IV			<ul style="list-style-type: none"> • The paper will be useful for students in developing ideas on environmental issues that geographers usually address.
	GGY – HC– 4026	Population and Settlement Geography	<ul style="list-style-type: none"> • To understand about the Population scenario of the world and their related problems. • To know about the various population characteristics and related population theories. • It helps the students to understand the rural urban population structure and their various issues. • To understand about the morphology of the various settlement pattern. • It helps students to understand the various settlement types and their characteristics.
	GGY – HC– 4036	Remote Sensing Techniques and GIS	<ul style="list-style-type: none"> • This paper is a core paper that intends to introduce students to the interface of Remote Sensing and GIS. • It seeks to develop new insights among students on the relevance of geospatial studies within the field of geography. • The paper remains useful for students in developing skills in spatial data analysis if they wish to pursue a research programme.
	GGY-SE–4014	Advanced Statistical Techniques for Spatial Analysis	<ul style="list-style-type: none"> • This paper study on Advanced Spatial Statistical Techniques basically deals with understanding the application of different statistical measures for analysing data relating to various geographical phenomena. • It provides general

			<p>understanding of geographical data and application of various statistical measures for their meaningful analysis</p> <ul style="list-style-type: none"> • Acquiring basic knowledge about probability and normal distributions and their applications for sample data collection and analysis • Understanding the patterns and processes associated with various geographical phenomena through application of different statistical techniques.
V	GGY – HC– 5016	Regional Planning and Development	<ul style="list-style-type: none"> • This paper will introduce students to the rationale underlying the relevance of balanced regional development and spatial inequalities in geography • It seeks to develop new insights among students on the issue of development and disparities among geographical regions • The paper will be useful for students in developing ideas on disparities within and between countries and their fallout. • The paper will help provide theoretical insights and perspectives to students if they wish to pursue a research programme in future.
	GGY – HC– 5026	Social and Political Geography	<ul style="list-style-type: none"> • The paper will be useful for the students in developing ideas on basic concept of social geography. • It deals with the social categories like- caste, class, religion, ethnicity, and gender and their spatial distribution. • The paper indents to

			<p>provide basic concept of State, Nation and Nation State.</p> <ul style="list-style-type: none"> • The paper will be helpful for the students to know about the various political phenomenon of a county. • It helps the leaner to understand various conflicts among the countries of the world. • The paper will be useful for the students preparing for competitive exams including state civil service exam and other national level exam.
	GGY-HE-5016	Climate Change: Vulnerability and Adaptation	<ul style="list-style-type: none"> • To make the students understand that climate change is a continuous process in both global and regional environments. • To impact information and knowledge about the impacts of climate change and the different modes of human adaptation to climate change. • To educate the students that climate change is a global issue and its management needs global concern and co-operation. Course outcomes. • The students will acquire knowledge and skill to detect the noticeable impacts of climate change in their vicinity. • The students may join various govt. and non-govt. agencies dealing with climate change study and mitigation. • The students will be able to know the extent to which the people and their economic activities are vulnerable to climatic

			changes and may suggest some adaptation strategies to the affected people, especially in the agricultural sector.
	GGY - HC –5056	Urban Geography	<ul style="list-style-type: none"> • This paper introduces students to the field of urban geography and its specificities. • It seeks to develop new insights among students on the relevance of an urban economy and geography and associated problems in a rapidly urbanizing world. • The paper will be useful for students in developing ideas on how geographical factors organize urban spaces and how geographers seek to address city specific problems and issues. • It will build skills for students seeking to enrol in a research programme and/or provide openings for them with urban/city planning agencies
VI	GGY – HC– 6016	Geographical Thought	<ul style="list-style-type: none"> • This paper is a core paper that intends to introduce students to philosophical and methodological issues in the development of the discipline of geography. • To assess the nature and trend of ancient, modern and post-modern trends in the field of geography • The paper will be useful for students in understanding perspectives on the development and contemporary trends in geography and its systematic study.

	GGY – HC– 6026	Geography of Resources and Development	<ul style="list-style-type: none"> • This theory course basically deals with concept of resource and its classification, and the distribution, utilization and management of land, water, forest and energy resources. • It also focuses on the natural resource base of North-East India and its problems of conservation and management. Besides, it also provides basic idea about sustainable development of resources. • Understanding the basic concept of resource and its various types and their utilities. • Acquiring basic information about potentials and management of resources like land, water, forest and power in global context. • Understanding the prevailing natural resource potential of North-East India and problems of management.
	GGY-HE-6036	Sustainable Development	<ul style="list-style-type: none"> • The paper highlights on the basics of sustainability including the millennium development goals. It also focuses on sustainable and inclusive development along with environmental management. Sustainable development policies and programmes including the principles of good governance are also discussed in the paper. • To understanding about the concept of sustainability, sustainable development and inclusive development.

			<ul style="list-style-type: none"> • Knowledge of sustainable development policies and programmes. • Deeper knowledge of the national environmental policy, and the principles of good governance
	GGY-HE-6044	Research Methods and Project Work	<ul style="list-style-type: none"> • The paper Research Methods (Practical) is will enable students to understand how to approach a research problem and to formulate research objectives and research questions in proper perspective. • In addition, knowledge of formulating of hypothesis and testing, framing of questionnaires, understand both qualitative and quantitative techniques of data collection and analyze the same • Understand the basics and utility of review of literature and preparation of research report. • 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 which doing quality research.

SUBJECT: HISTORY

PROGRAMME SPECIFIC OUTCOME

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 OUTCOME

Semester	Paper Code	Paper Title	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	On successful completion of this course the students will be able to Explain the economic and socio-cultural connections, transitions and stratifications during the Ruling houses, empires and the politico-administrative nuances of early Indian History from 300 BCE to 300 CE.
	HIS – HC– 2026	Social Formations and Cultural Patterns of The Medieval World	A fter the completion of this course, the students will beable 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.
	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

III			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 the civilizations of Europe in the period
	HIS – HC– 3036	History of India IV (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 period.
		History of India VI (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

	HIS – HC– 4036		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 able 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 devastating wars in the intervening period
	HIS – HC– 5026	History of India VII (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 against the British policies.
	HIS –HE-5016	History of Assam (Upto c. 1228)	This paper will give a general outline of the history of Assam from the earliest times to the advent of the Ahoms in the 13th century. Upon completion, students will be acquainted with major stages of developments in the political, social and cultural history of Assam during the early times.
	HIS - HC –5056	History of Assam (C. 1228 –1826)	On completion of this paper, students will be able to identify major stages of developments in the political, social and cultural history of Assam during the medieval times. This paper will enable the student to explain the history of Assam from the 13th century to the occupation of Assam by the English East India Company in the first quarter of the 19th century.

VI	HIS – HC– 6016	History of India Viii (c. 1857 - 1950)	At 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 building in India.
	HIS – HC– 6026	History of modern 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.
	HIS-HE-6016	History of Assam (c. 1826 – 1947)	Upon completion of this course, students will be able to describe the period of British rule in Assam after its annexation by the imperialist forces. They will also be able to situate the development of nationalism in Assam and its role in India’s freedom struggle. The course would enable the students to analyse the main currents of the political and socio-economic developments in Assam during the colonial period.
	HIS-HE-6026	Assam Since independence	Students will be able to assess the aftermath of Partition and other socio-economic developments in post independence Assam upon completion of this course. They will also be able to identify the main currents of political and socio-economic development in Assam after India’s independence and the causes and impact of various struggles and movements in contemporary Assam.

SUBJECT: PHILOSOPHY

PROGRAMME SPECIFIC OUTCOME

Specific outcome of Philosophy (Hons) 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 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 OUTCOME

Semester	Paper Code	Paper Title	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	This paper basically develops the knowledge how to determine the logical truth and also the validity of arguments.It enables students to face different competitive examination. In this paper mathematical logic is applied to solve the Proplem of logical and mathematical enquiry.
III	PHI – HC– 3016	Western Philosophy (Descartes to Hegel)	This paper basically Let the student to know how the rationalistic, empiricestic, critical and idealitic enquiry regarding the origine of knowledge was developed in western Philosophical world.
	PHI – HC– 3026	Indian Philosophy- II	This paper introduced students with the different Theistic and Vedic Schools of Indian Philosophy and also provides the Knowledge of the logical,epistenological and metaphysical enquiry.
	PHI – HC– 3036	Ethics	This paper aims at to promote the student the moral Consciousness,a sense of cooperation and responsibility. How the people should lead a moral life and the relevance of morality in different fields of our activity and Profession can

			be realized by Proper study of this paper.
IV	PHI – HC– 4016	Contemporary Indian Philosophy	In this paper the Indian attempt contemporary a thinkers made an systematic, Critical and comprehensive study regarding the problem of the nature and desting of the universe. They have largely concentrated with the new meaning and re-orientation to classical Indian thought. Through this paper the students may be benifitted to realise huminity in real sense.
	PHI – HC– 4026	Philosophy of Religion	Religion occupies significant place and plays a very important role in our lives. Religion emerged in response to human needs. Man looked to realiset religion for guidance when confronted with problem in life and religion guided almost every aspect of human life.
	PHI – HC– 4036	Political & Social Philosophy	The paper promote students Knowledge the individual.This also introduces reader with the different Political and Social ideologies which enables and benifitted th student to face different competitive exams.
V	PHI – HC– 5016	Analytic Philosophy	In this paper the western contemporary thickness attempted to made a systematic, scientific, integrated critical and a comprehensive study of the problem of philosophical enquiry which are termed as new trends in Contemporary philosophy.
	PHI – HC– 5026	Phenomenology and Existentialism	This is the paper in which huminism and man’s existence is the main theme of Philosophy. This Paper leads the reader to huministic philosophy which recognizes the value and dignity of man and it makes him measure of all things. This paper also stressed upon subjectivity of individual human being and also the freedom and responsibility.
	PHI –HE-5016	Philosophy of Upanisads	This paper stressed upon the philosophy of Vedas and upanisods.By this paper the reader may also know the individual desting, law of karma and liberation which is essential to lead an ideal life of human being.

	PHI-HE-5026	Philosophy of Gita	This paper basically wants to give knowledge of the Gita. It tries to give the knowledge of the Bhakti and karma, and also the meaning and application of yoga.
VI	PHI – HC– 6016	Philosophy of Mind	This paper stressed upon the philosophy of Vedas and upanisods.By this paper the reader may also know the individual desting, law of karma and liberation which is essential to lead an ideal life of human being.
	PHI – HC– 6026	Meta Ethics	This paper basically wants to give knowledge of the Gita. It tries to give the knowledge of the Bhakti and karma, and also the meaning and application of yoga.
	PHI-HE-6016	Western Philosophy (Textual Study)	This paper basically based upon the philosophy of Mind.Students will get the knowledge about the psychology and the philosophy of mind by Proper study of this paper.
	PHI-HE-6026	Philosophy of Language	This paper wants to give knowledge of the Students about meta ethics, the ethical concepts and evaluations regarding Good and Right.
	PHI-HE-6036	Applied Ethics	This paper aims at to Promote the students the moral consciousness, a sense of coperation and responsibility. How the people should lead a moral life and in relevance of morality in different fields of our activity and Professions. Can be realised by The proper study of this paper. This paper is helpful for various competitive examinations.

SUBJECT: POLITICAL SCIENCE

PROGRAMME SPECIFIC OUTCOME

Specific outcome of Political Science (Hons) 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 be able to understand prevailing political culture in a political system and thereby they get themselves acquainted 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 fields 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 to the student.

COURSE OUTCOME

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

			<p>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.</p>
IV	POL – HC– 4016	Political Processes and Institutions in Comparative Perspective	<p>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.</p>
	POL – HC– 4026	Public Policy and Administration in India	<p>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.</p>
	POL – HC– 4036	Global Politics	<p>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</p>

			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.
	POL-SE- 5014	Public Opinion and Survey Research	This course will introduce the students to the debates, principles and practices of public opinion polling in the context of democracies, with special reference to India.
	POL - HE –5016	Human Rights	The course helps students to understand the concepts and institutions related to Human Rights at international level. It again familiarizes students with different approaches and perspectives on Human rights.
	POL-HE-5046	Select Constitutions	The paper introduces the constitutional and political systems of four countries namely, UK, USA, China and

			Switzerland. This course is an integral part of public service examinations and familiarizes students with the various types of governments of those countries.
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.
	POL-HE-6036	Women, power and politics	This course open's up the question of women's agency, taking it beyond "women's empowerment" and focusing on women as racial social agents. It attempts to question the complicity of social structures and relations in gender equality.
	POL-HE-6046	Social Movements in North-east India	It helps students to familiarize with social movements of the North-east India and their historical developments of such social movements of the region.
	POL-SE-6014	Conflict and Peace Building	This course is designed to help build an understanding of a variety of conflict situations among students in a way that they can relate to them through their lived experiences.

Programme outcome for Bachelor of Science:

- 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 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 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 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 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 imbued with ethical, moral and social values in personal and social life leading to highly cultured and civilized personality.

BOTANY

PROGRAMME SPECIFIC OUTCOME

Specific outcome of Botany (Hons) syllabus prescribed by Gauhati University may be cited below:

- 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.
- Acquire depth and breadth of knowledge/expertise in the field of Plant Identification.
- Interpretation of collected information and use taxonomical information to evaluate and formulate a position of plant in taxonomy.
- Students will be able to collect data, formulate and analyse the collecting data but applying scientific methods.
- Students will be able to present scientific hypotheses and data both orally and in writing in the formats.
- Students will be able to access the primary literature, identify relevant works for a particular topic, and evaluate the scientific content of these works.
- Students will be able to use physical principles (physics, chemistry) for bio- chemical analysis and also analyse data by using statistical and mathematical formulas
- Students will be able to identify the major groups_ 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.
- 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.
- 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.
- 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.

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

COURSE OUTCOME

Semester	Paper Code	Paper Title	Course Outcome
I	BOT - HC – 1016	Phycology and Microbiology	<ul style="list-style-type: none"> • Understand the diversity among Algae. • Know the systematic, morphology and structure, of Algae. • Understand the life cycle pattern of Algae. • Understand the useful and harmful activities of Algae. • Understand the Microbial world and their diversity • Know the Economic Importance of Microbes • Know the harmful effects of microbes • Know the role of microbes in Research activities
	BOT - HC – 1026	Biomolecules and Cell biology	<ul style="list-style-type: none"> • Know the chemical nature of biomolecules. • Understand the different types of interaction in Biomolecules. • Structure and general features of enzymes. • Concept of enzyme activity and enzyme inhibition. • Understand the Biochemical nature of cell and cell organallies • Know about the cell divisions: mitosis & meiosis • Know the endomembrane system and protein transport
	BOT – HC– 2016	Mycology and Phytopathology	<ul style="list-style-type: none"> • Understand the Biodiversity of Fungi and understand the life cycle pattern of Fungi • Know the Economic Importance of Fungi • Know the terminologies in plant pathology.

II			<ul style="list-style-type: none"> • Understand the scope and importance of Plant Pathology. • Know the prevention and control measures of plant diseases and its effect on economy of crops.
	BOT – HC– 2026	Archegoniate	<ul style="list-style-type: none"> • Understand the morphological diversity of Bryophytes. • Understand the economical and ecological importance of the Bryophytes. • Know the taxonomic position, occurrence, thallus structure, reproduction of Bryophytes. • Understand the morphological diversity of Pteridophytes. • Understand the economic and ecological importance of the Pteridophytes • Know the taxonomic position, occurrence, thallus structure, reproduction of Pteridophytes. • Know the evolution of Bryophytes and Pteridophytes.
III	BOT – HC– 3016	Anatomy of Angiosperms	<ul style="list-style-type: none"> • Understand plant communities and ecological adaptations in plants. • Understand the tissues and tissue systems of Plants • Know the wood anatomy • Know the anatomical difference of dicot and monocot • Know the origin, development, arrangement and diversity in size and shape of leaves.
	BOT – HC– 3026	Economic Botany	<ul style="list-style-type: none"> • Know the major introduced plant species, concept of centre of origin and their importance • Know about crop domestication and loss of genetic diversity • Understand the evolution of new crops /varieties • Know about the germplasm diversity • Understand the economic importance of various plant species.

	BOT – HC– 3036	Genetics	<ul style="list-style-type: none"> • Know about the genomic organization of living organisms, study of genes genome, chromosome etc. • Gain knowledge on Mendels genetics and its extensions • Know about variation in chromosome number and structure • Understand about population and evolutionary genetics
	BOT-SE-3014	Biofertilizers	<ul style="list-style-type: none"> • Basic knowledge on the microbes used as biofertilizer and understand the process of their isolation, identification, mass multiplication, carrier based inoculants and knowledge on Actinorrhizal symbiosis • Concept on the general characteristics, isolation, mass multiplication carrier based inoculants of Azospirillum and Azotobacter also the knowledge on the crop response to Azotobacter • Basic knowledge on Cyanobacteria including factors affecting growth of Cyanobacteria, concept on the nitrogen fixation and use of blue green algae in rice cultivation • Brief knowledge on the Mycorrhizal association and understand the details of various types, taxonomy, occurrence, distribution and growth parameters of Mycorrhiza • Details about the organic farming, maintenance and recycling of biodegradable waste material and understand the methods of making biocompost and vermicompost with application
	BOT – HC– 4016	Molecular Biology	<ul style="list-style-type: none"> • Gain knowledge about the mechanism of DNA replication. • Gain knowledge of transcription in prokaryotes and eukaryotes. • Gain knowledge of Processing

IV			<p>and modification of RNA.</p> <ul style="list-style-type: none"> • Gain knowledge of protein synthesis, its modification and its involvement in formation of polypeptides.
	BOT – HC–4026	Plant Ecology and Phytogeography	<ul style="list-style-type: none"> • Understands the inter-relationship between the living world and environment • Know the soil profile and role of climate in soil development • Understand the concept of ecology and its specification • Understands Ecosystem and its components • Understands the principles, endemism, biomes and phytogeographical divisions of India
	BOT – HC–4036	Plant Systematics	<ul style="list-style-type: none"> • Gain knowledge of plant identification, concept of classification, principle and rules of nomenclature • Gain knowledge of origin and evolution of angiosperm and their evolutionary relationship • Know biometrics, numerical taxonomy and cladistics • Know the history of plant classification
	BOT-SE-4014	Nursery and Gardening	<ul style="list-style-type: none"> • Brief idea about objectives, scope, infrastructure and maintenance of Nursery • Concept on structure, types and dormancy of seeds and brief idea about seed storage including types and process and knowledge on seed production technology • Knowledge on various modes of vegetative propagation and maintenance of plants in green house • Brief idea about development and maintenance of gardening including scope and types and understand the various gardening operations including management of pests and diseases

			<ul style="list-style-type: none"> • Detail knowledge on managements of seeds and seedlings and concept about cultivation, storage and marketing of important vegetables
V	BOT – HC– 5016	Reproductive Biology of Angiosperm	<ul style="list-style-type: none"> • Gain knowledge of reproductive development of Angiospermic plant • Understand the pollination and fertilization mechanism • Gain knowledge embryo, endosperm, seed, structure and their development • Know about apomixes and polyembryony
	BOT – HC– 5026	Plant Physiology	<ul style="list-style-type: none"> • Gain knowledge of Plant water relationship • Gain knowledge of mineral nutrition, nutrient uptake and translocation • Gain knowledge of plant growth regulators, Physiology of flowerings • Gain knowledge of cryptochromes and phototropins
	BOT-HE- 5016	Natural Resource Management	<ul style="list-style-type: none"> • Comprehensive knowledge on different types of natural resources and their ecological, economical and socio-cultural values • Basic understandings of land, water and forest resources • Overall knowledge on resource degradation, their judicious use and management for sustainability • Knowledge on biodiversity - its importance, management and Bioprospecting • Knowledge on IPR, and global arena on resource management, conservation and benefit sharing • Hands on experience on the domestic solid waste estimation and determining its impact on land degradation • Hands on experience on forest study using tools like GPS/GIS,

			and understanding of ecological importance of forest resources
	BOT - HE -5026	Horticultural Practices and Post-Harvest Technology	<ul style="list-style-type: none"> • Basic understandings on Horticultural science and its importance in employment generation and socio-economic development • Classification of horticultural crops, identification of potential horticultural crops – their cultivation, production, management and commercialization • Knowledge on horticultural techniques, landscaping and gardening • Overall knowledge on post-harvest technology, disease management, and germplasm management for horticulture • Field knowledge of gardening, nurseries, standing crops of horticultural importance
VI	BOT – HC– 6016	Plant Metabolism	<ul style="list-style-type: none"> • Understand the concept of Metabolism • Gain knowledge of mechanism of photosynthesis, respiration, ATP synthesis • Gain knowledge of Metabolisms of Carbohydrate, Lipid and Nitrogen • Understands the Mechanism of signal transduction
	BOT – HC– 6026	Plant Biotechnology	<ul style="list-style-type: none"> • Understand the method, utilization and importance of Plant Tissue culture. • Gain knowledge of DNA technology • Gene cloning and method of gene transfer. • Gain knowledge on application of Biotechnology
			<ul style="list-style-type: none"> • Understanding the roles of microbes in industries and environment • Basic knowledge of different kinds of bioreactors and

	BOT-HE-6016	Industrial and Environmental Microbiology	<p>fermentation processes</p> <ul style="list-style-type: none"> • Knowledge on production processes of some microbial products in industries through site visits • Knowledge on application of enzymes in industries • Diversity and distribution of microbes in air, water and soil • Basic understandings on water microbiology and water analysis methods • Usefulness of microbes in agriculture and bioremediation of contaminated soils • Practical experiences on basic microbiological techniques and handlings
	BOT-HE-6026	Analytical Techniques in Plant Sciences	<ul style="list-style-type: none"> • Knowledge on microscopy and imaging in plant science • Principles and application of centrifuge, spectroscopy and chromatography in biology • Basic knowledge on biostatistics including measures of central tendency and dispersions, statistical data analysis and representations • Practical knowledge on microscopy, chromatography, centrifugation and spectroscopy
	BOT-HE-6036	Project Work/Dissertation	Practical knowledge on addressing relevant scientific questions through experimentation

Subject: CHEMISTRY

PROGRAMME SPECIFIC OUTCOME (B. Sc)

Specific outcome of Chemistry (Hons) 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, gravimetric, redox 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.
- 20.

COURSE OUTCOME

Semester	Paper Code	Paper Title	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	This course contains states of matter-gaseous, liquid and solid states along with ionic equilibria which will help students 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 are 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.
	CHE – HC– 2016	ORGANIC CHEMISTRY I	This course is inducted to apprise students with introduction to organic compounds, electron displacement, type of reagents and reaction intermediates. The chemistry of aliphatic and aromatic hydrocarbon, conformational analysis of cycloalkanes and basic stereochemical phenomena are included. Students are expected to learn, explain, describe and analyze different classes of organic compounds, their reactivities and mechanisms along with stereo chemical considerations. Students will be able to

II			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 chemical thermodynamics, chemical equilibrium, solutions and colligative properties are taught to the students. 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 students will be able to understand the chemical systems from thermodynamic point of view.
III	CHE – HC– 3016	INORGANIC CHEMISTRY-II	This course aims to acquaint the students with the application of the redox chemistry. Concepts of protonic and non-protonic acids and bases are introduced for students to appreciate different types of chemical reactions. Periodic behaviour of s and p block elements related to their electronic structure and their reactivity is included to acquaint students with the principles governing their reactivity. This course further intend to apprise students about the variety of compounds of the main group elements including oxides, hydrides, nitrides, interhalogens, noble gases and inorganic polymers. As part of the accompanying lab course, experiments involving iodo- and iodimetric titrations are included for the students to explore other varieties of redox titration. Preparation of simple inorganic compounds is introduced to give hands-on experience of inorganic synthesis. On successful completion of this course students would be able to apply theoretical principles of redox chemistry in the understanding of metallurgical processes.

	CHE – HC– 3026	ORGANIC CHEMISTRY-II	This course is intended to apprise students about different classes of organic compounds, including halogenated hydrocarbons, alcohols, phenols, epoxides, carbonyl compounds and carboxylic and sulfonic acids. Students are expected to learn and differentiate between various organic functional groups; explain, analyze and design transformations between different functional groups. Students will be able to describe and classify organic compounds in terms of their functional groups and reactivity.
	CHE – HC– 3036	PHYSICAL CHEMISTRY-III	The aim of this course is to teach students important topics like phase equilibria and chemical kinetics in detail and topics like surface chemistry and catalysis are introduced. 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-3074	INTELLECTUAL PROPERTY RIGHTS (IPR)	This course helps students learn the importance of protecting the scientific discoveries, with commercial potential or the intellectual property rights at all levels – statutory, administrative, and judicial. The purpose of this course is to apprise the students about the multifaceted dimensions of this issue. 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.
			This course introduces students to coordination chemistry. Various aspects like nomenclature, structure, bonding, variety and reactivity of the coordination

IV	CHE – HC– 4016	INORGANIC CHEMISTRY-III	<p>compounds are included. Bioinorganic chemistry is included in this course to acquaint students on the useful and harmful aspects of metals in biological systems. Through the accompanying lab course, experiments related to gravimetric analysis, synthesis of coordination compounds and separation of metal ions using chromatography is included. This will broaden the experimental skills of the students where students will learn about various aspects of experiment design depending upon the requirements like synthesis, estimation or separation. 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.</p>
	CHE – HC– 4026	ORGANIC CHEMISTRY-III	<p>The course intrudes students to different classes of N-based compounds, including alkaloids and terpenoids and their potential application. Students are expected to learn about different classes of N-based compounds; their structures, synthesis and reactivity. 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.</p>
	CHE – HC– 4036	PHYSICAL CHEMISTRY-IV	<p>The aim of this course is to introduce students with primarily two areas of physical chemistry- electrochemistry and electrical and magnetic properties of atoms and molecules. 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</p>

			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-4046	FUEL CHEMISTRY (SEC)	This course discusses about the chemistry of various sources of energy. Students are expected to learn about the composition of coal and petroleum products, their extraction, purification methods and usage. A section also covers classification and applications of natural and synthetic lubricants. Students will also learn about the determination and significance of various industrially relevant physical parameters for different fuels and lubricants.
V	CHE – HC– 5016	ORGANIC CHEMISTRY-IV	This course introduces students to nucleic acids, amino acids and pharmaceutical compounds. Students will be familiarized with the importance of nucleic acids, amino acids and develop basic understanding of enzymes, bioenergetics and pharmaceutical compounds. 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	The aim of this course is to introduce the students with three important areas- quantum chemistry, molecular spectroscopy and photochemistry. In quantum chemistry unit the students will be taught the postulates of quantum mechanics and the application of quantum mechanical ideas in some simple systems such as particle in a box, rigid rotor, simple harmonic oscillator etc. In spectroscopy unit, rotational, vibrational, Raman, electronic, spin resonance, and electronic spectroscopy will be introduced. 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 be able to understand the basics of various kinds of spectroscopic techniques and photochemistry.
	CHE-HE- 5016	CHE-HE-5026: ANALYTICAL METHODS IN CHEMISTRY (DSE)	This is an elective course designed to help students who learn about the qualitative/quantitative characterization and separation techniques. The content of this course aims to cover some of the widely used instrumental techniques for characterization of samples. Experiments included aim at giving students hands on experience using different instrumental techniques and chemical analysis. On successful completion students will 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 and take judicious decisions while analyzing different samples.
	CHE - HE –5046	NOVEL INORGANIC SOLIDS (DSE)	This course intends to make learners familiar with a wide variety of technologically important and emerging materials. It will prepare the learners for studying materials further at the master's level. 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 – HC– 6016	INORGANIC CHEMISTRY-IV	The unit on reaction mechanism is included for the students to get acquainted with the kinetic and thermodynamic factors governing the reaction path and stability of inorganic compounds. Organometallic compounds are introduced so as to apprise students about the importance of metal carbon bond to form complexes and their application as catalysts. Students are expected to learn factors leading to stability of organometallic compounds,

VI			<p>their synthesis, reactivity and uses. Qualitative inorganic analysis is included to give students an idea and hands on experience of application of inorganic chemistry. Students should learn how differential reactivity under different conditions of pH can be used to identify variety of ions in a complex mixture. Experiments related to synthesis and characterization of coordination compounds are included to supplement their theoretical knowledge. By studying this course the students are 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.</p>
	CHE – HC– 6026	ORGANIC CHEMISTRY-V	<p>This is a basic course in organic spectroscopy and provides introduction to carbohydrate chemistry, dyes and polymers. Students are expected to learn about the different spectroscopic techniques and their applications in organic chemistry. Students shall be apprised with carbohydrate chemistry, dyes and polymers and their structure, reactivity and chemical properties. 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</p>

			examine carbohydrates, polymers and dye materials.
CHE-HE-6036	INORGANIC MATERIALS OF INDUSTRIAL IMPORTANCE (DSE)		This course helps to learn the synthetic process, properties and the utility of the industrially important inorganic materials (such as silicates, ceramics, cements, fertilizers, paints, batteries, alloys and explosives) and learn some of the industrial process such as surface coating and catalysis in relevant to industry where heterogeneous catalysis dominates. Experiments help learners acquire hands on experience in qualitative and quantitative analysis of the inorganic materials which are basically manufactured in chemical industries.
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		Student will complete a project work and then prepare a report on that.

Subject: MATHEMATICS

PROGRAMME SPECIFIC OUTCOME

Specific outcome of Mathematics (Hons) 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 OUTCOME

Semester	Course code	Course name	Course outcome
I	MAT-HC-1016	Calculus	<ul style="list-style-type: none"> Differentiate & integrate functions to tackle several problems in studies like life science, physics, economics, etc.
	MAT-HC-1026	Algebra	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Students are introduced to the concept of real analysis. They can check the convergence of real sequences & series which are often required in probability theory and other studies.
	MAT-HC-2026	Differential Equation	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	Analytic Geometry	<ul style="list-style-type: none"> Analytic study of basic geometric structures such as parabola, hyperbola and their 3-dimensional analogues
	MAT-SE-3014	Computer algebra systems and related software	<ul style="list-style-type: none"> This course aims at familiarizing students with the usage of mathematical softwares (Mathematica / MATLAB /Maxima / Maple) and the statistical software R . The basic emphasis is on plotting and working with matrices using CAS . Data entry and summary commands will be studied in R. Graphical representation of data shall also be explored.
IV	MAT-4016	Multivariation Calculus	<ul style="list-style-type: none"> Extend one dimensional calculus to two and higher dimensions. Green_s theorem, Gauss Divergence theorem applies to several problems in complex analysis and partial differential equations.

	MAT-HC-4026	Numerical Method	<ul style="list-style-type: none"> Learn about basic numerical ideas as bisection method to approximate solutions to equations. Learn about computer friendly methods to solve large problems.
	MAT-HC-4036	Ring Theory	<ul style="list-style-type: none"> Ring, another abstract algebraic structure that helps better understand polynomials.
V	MAT-HC-5016	Riemann Integration And Metric Space	<ul style="list-style-type: none"> Understand integration as explained by Riemann and Darboux. Relation between integration and infinite series is also studied. A generalization of distance, named metric is studied and the topology of metric space.
	MAT-HC-5026	Linear Algebra	<ul style="list-style-type: none"> Discuss the idea of vector spaces and inner product spaces. Understand what a linear transformation does geometrically and link it with the concept of matrices.
	MAT-HE-5016	Number Theory	<ul style="list-style-type: none"> Learn about some fascinating discoveries related to the properties of prime numbers, and some of the open problems in number theory, viz., Goldbach conjecture etc.. Know about number theoretic and modular arithmetic. Solve linear, quadratic and system of linear congruence equations.
	MAT-HE-5026	Mechanics	<ul style="list-style-type: none"> Know about the concepts in statics such as moments, couples, equilibrium in both two and three dimensions. Understand and theory behind friction and center of gravity. Know about conservation of mechanical energy and work-energy equation. Learn about translation and rotational motion of rigid bodies.
VI	MAT-HC-6016	Complex Analysis	<ul style="list-style-type: none"> Discuss calculus in the complex field. Use complex theoretic ideas to solve different real integrals.
	MAT-HC-6026	Partial Differential Equations	<ul style="list-style-type: none"> Learn about various methods of solving PDEs and use it to solve problems in physics like the motion of a vibrating string.

	MAT-HE-6026	Bio-mathematics	<ul style="list-style-type: none"> • Learn the development, analysis and interpretation of bio mathematical models such as population growth, cell division, and predator- prey models. • Learn about the mathematics behind heartbeat model and nerve impulse transmission model. • Appreciate the theory of bifurcation and chaos. • Learn to apply the basic concepts of probability to molecular evolution and genetics.
	MAT-HE-6036	Mathematical Modelling (including Practical)	<ul style="list-style-type: none"> • Know about power series solution of adifferential equation and learn about Legendre's and Bessel's equations. • Use of Laplace transform and inverse transform for solving initial value problems. • Learn about various models such as Monte Carlo simulation models, queuing models, and linear programming models.

Subject: PHYSICS

PROGRAMME SPECIFIC OUTCOME

Specific outcome of Physics (Hons) 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, Algebraic operation etc.
2. Ability to understand mechanics.
3. Ability to understand 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 OUTCOME

Semester	Course Code	Course Name	Course Outcome
I	PHY-HC-1016	Mathematical Physics I	Mathematical physics is considered as the language of physics. The knowledge on mathematical physics provides the students more problem solving skill and deep understanding on physics.
	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. This syllabus will cater the basic requirements for their higher studies. This course will provide a theoretical basis for doing experiments in related areas.
II	PHY-HC-2016	Electricity and magnetism	These courses help students to provide a sound foundation in electricity and electrodynamics as well as in basic electronics, which have the key role in the development of Modern technological world. It is also the theoretical foundation of different practical in physics.
	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. Kinetic theory of gases provide the nature of gases in different conditions like pressure, temperature, volume etc.

	PHY-HC-3036	Digital system and applications	This course will help to understand the functioning and operation of CRO to measure physical quantities in electrical and electronic circuits. Student will learn the basics of IC and digital circuits, and difference between analog and digital circuits, various logic GATES and their realization using diodes and transmitters. The fundamental of Boolean algebra and their role in constructing digital circuits will be learnt by students. Learning about combinatorial and sequential systems by building block circuits to construct multi-vibrators and counters will also be the part of the course. Understand basics of microprocessor and assembly language programming with examples will be provide in the last unit.
	PHY-SE-3014	Physics Workshop Skills	The aim of this course is to enable the students to familiar and experience with various mechanical and electrical tools through hands-on mode
IV	PHY-HC-4016	Mathematical Physics III	<p>Knowledge of various mathematical tools like complex analysis, integral transform will equip the student with reference to solve a given ODE, PDE. These skills will help in understanding the behavior of the modeled systems.</p> <p>In the laboratory course, the students will apply their C⁺⁺/Scilab programming language to solve different problems like</p> <ul style="list-style-type: none"> (i) Solution first- and second- order ordinary differential equations with appropriate boundary conditions, (ii) Evaluation of the Gaussian integrals, (iii) Evaluation of a converging infinite series up to a desired accuracy, (iv) Evaluation of the Fourier coefficients of a given periodic function, (v) Plotting the Legendre polynomials and the Bessel functions of different orders and interpretations of the results, (vi) Least square fit of a given data to a graph,
	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	<p>At the end of the course the student is expected to assimilate the following and possesses basic knowledge of the following,</p> <ul style="list-style-type: none"> ▪ 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 non-inverting 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 op-amps.
PHY-HC-5016	Quantum Mechanics and application	<p>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.</p>

V	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.
	HY-HE-5036(DSE)	Advanced Mathematical Physics-I	After the completion of this course, students will be able to solve problems in Physics related to Linear Vector space, Matrix algebra, Tensor.
	HY-HE-5056(DSE)	Nuclear and Particle Physics	Upon completion of this course, students will have the understanding of the sub atomic particles and their properties. They will gain knowledge about the different nuclear techniques and their applications in different branches of Physics and societal application. The course will develop problem based skills and the acquire knowledge can be applied in the areas of nuclear, medical, archeology, geology and other interdisciplinary fields of Physics and Chemistry.
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.
	PHY-HE-6036	Advanced Mathematical Physics II	After competition of the course students will be able to apply the concepts of Calculus of Variations, Group Theory and Probability Theory to solve numerical problems in Physics.
	PHY-HE-6056	CLASSICAL DYNAMICS	Upon completion of this course, students will have the overview of Newton's Laws of Motion, Special Theory of Relativity by 4-vectoer approach and fluids. Students will also have the understanding of the

			Lagrangian and Hamiltonian of a system.. By the end of this course, students will be able to solve the seen or unseen problems/numericals in classical mechanics.
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Subject: ZOOLOGY

PROGRAMME SPECIFIC OUTCOME

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

project, assimilate and analysis of the data and ideas and concluding in the form of project report.

COURSE OUTCOME

Semester	Paper Code	Paper Title	Course Outcome
I	ZOO - HC – 1016	Non Cordates -1	Students are able to understand about the characters and classification and life cycle of various Protista, Porifera, Cnideria, Ctinophora, Platyhelminthes and Nemathhelminthes
	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
II	ZOO-HC-2016	Non-Chordates Ii: Coelomates	Students are able to understand about the characters and classification, social life and evolutionary significance Coelomates.
	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.
III	ZOO-HC-3016	Diversity of Chordata	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.
	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
	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

IV			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.
	ZOO-HC-4026	Animal 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	Animal Physiology: Biochemistry of Metabolic Processes	Students are able to understand metabolic process including carbohydrates, lipid and protein and also ATP production.
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.
	ZOO-HC-5026	Principles of Genetics	Students are able to understand about the Mendelian inheritance, interaction of genes, mutation and its effects.
VI	ZOO-HC-6016	Developmental Biology	Students are able to acquire a thorough knowledge of embryonic development along with the factors affecting it.
	ZOO-HC-6026	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.

Subject: COMPUTER SCIENCE

CO1: Introduction to Programming Language: This paper will develop the ability to learn new languages more quickly to understand the concept of functional programming language Develop ability to learn and write small programs in different programming Languages.

CO2: Basic Electronics: This paper will develop the ability to check the hardware issues in any electrical devices.

CO3: Practical Programming in C: This paper will develop the ability to learn basic programming skills and enhances the problem solving capacity using computer programming.

O4: ICT Hardware:- This paper specially focuses to understand the structure, function and characteristics of computer systems, to understand the design of the various functional units and components of computers. This paper also includes MS Word, MS power point, MS excel contents.

CO5: Discrete Mathematics: Students will be bale to learn functionalities of basic logic gates and Boolean Algebra and other discrete mathematics applications in computer science.

CO6: Practical ICT Hardware:- This paper specially focuses on the hardware part of the Computer system specially the motherboard parts, diagnosis also Practical of MS office (MS power point, MS Excel, MS Word etc.).

CO7: Data Structures: This paper will develop the ability to learn the structures of data and how data can actually be organized and stored in computer memory.

CO8: Computer Organization and Architecture: This paper specially focuses to understand the structure, function and characteristics of computer systems, to understand the design of the various functional units and components of computers, identify the elements of instructions sets and their impacts on processor design, to explain the function of each element of a memory hierarchy and to identify and compare different methods for computer I/O modules.

CO9: Practical Data Structure :This paper provides practical approaches to design the available user defined data structures using programming language

CO10: Operating System: This paper focuses to understand the basic components of a computer operating system, and the interactions among the various components. The course covers an introduction on the policies for disk scheduling, CPU scheduling, deadlocks, memory management, synchronization, system calls, and file systems.

CO11: Database Management System: This paper will develop the ability to learn the structural knowledge of data storage. It covers the introduction of Database and DBMS.

CO12: Practical Operating System DBMS: This paper will develop the practical based knowledge of database management system.

CO13: Object Oriented Programming using C++: This paper specially focuses to students understand the principles of object-oriented problem solving and programming. This paper also analyse problems and implement simple C++ application using an object-oriented software engineering approach. After completing this subject student will be able to learn the concept of object, class, Inheritance and polymorphism.

CO14: Computer Oriented Numerical Methods and Statistical Techniques: This paper specially focuses on solving various numerical methods theoretically like Bisection, Newton-Raphson, Simpson's rules, Runge-Kutta, Polynomials etc. with the help of computer programming.

CO15: Computer Networks: - This paper focuses to understand and describe the layered protocol model and describe,analyse and evaluate a number of data link, network, and transport layer protocols ,and evaluate networks and services homes,data centres,LANs,WANs.This paper also teach program network communication services for client/server and other applications layouts.This paper describes,analyse and evaluate various related technical,administrative and social aspects of specific computer network protocols from standards documents and other primary materials found through research.

CO16: Microprocessor and Assembly Language Programming: This paper specially focuses to understand the structure, function and characteristics of computer systems, to understand the design of the various functional units and components of computers and different architectures which supports processor, provides interface for i/o devices, maintains timing and control of the computer. This paper will also help to learn assembly language program which helps students understanding the processor and memory functions, using assembly language program we can generate traffic control signal etc. This subjects also helps to identify the elements of instructions sets and their impacts on processor design, to explain the function of each element of a memory hierarchy and to identify and compare different methods for computer I/O modules.

CO17: Practical Object Oriented Programming and Computer Networks: This Lab paper specially focuses on practical implementation of Object Oriented Programming through C++ language and Computer Networks protocols and other terminologies relating to it.

CO18: Practical Computer Oriented NMST Microprocessor and Assembly Language Programming: This paper specially focuses on the practical of Computer oriented numerical methods like Bisection, Newton-Raphson, Simpson's rules etc. and assembly language programming.

CO19: Automata Theory and Languages: This paper focuses to understand the basic properties of Formal Languages and Grammars of Regular, Context-Free and Recursively Enumerable languages, study on grammars to produce strings from a specific language. It also acquires concepts relating to the theory of computation and computational models.

CO20: Web Technologies: On completion of this paper, a student will be familiar with client server architecture and able to gain basics of developing and hosting a web application using HTML, JAVASCRIPT, CSS, XML, ASP, PHP etc.

CO21: System Administration using Linux: This paper focuses to understand and describe the basics of file structures and processing with files using commands and System maintenance, Disk usage, User management, Networking and IP addressing basics and other system administration related tasks.

CO22: Practical Web Technologies System Administration using Linux: One part of this paper focuses on practical approaches to design, develop and host a web application using various languages and other part of the paper helps students to become familiar with Linux environment with various commands and tools and techniques learnt in the theory paper of System Administration using Linux.

CO23: Project: Each student is assigned with a project work based the knowledge and concepts of previous subjects taught to them and it strongly emphasizes on how a software is designed and developed from the stage of feasibility analysis to maintenance of the software.