PSO (Programme Specific Outcome)
Department of Assamese LCBC
(CBCS: 2019-20)

1. To know about the knowledge of creative writing.
2. To acquire the knowledge of Assamese Language-Literature-Culture.
3. Students can take professionally the print and electronic media.
4. To know about the knowledge of Art and Translation.
5. To gather knowledge of the theory of editing and publishing.
6. To acquire the knowledge of Poem reciting and theory.
7. To gather knowledge about theatre stage, Acting skill and others.
8. To know about the comparative literature theory and practices.
9. To know about the literary criticism and its theories.
10. Student can acquire the knowledge of fiction science.
11. To focus on research and field study for future.

Programme Outcome/Programme Specific Outcome/Course Outcome
Lalit Chandra Bharali College offers undergraduate courses in three streams namely, Arts, Science and Commerce.

Department of Assamese, LCBC (CBCS-2019-20)

Semester	Course code	Subject	objectives
First	ASM -HC 1016	History of Assamese Literature Charyapad - Sankari Era	• To know about the history of Assamese Literature • To know about the classification of Assamese literature era and comment of different researchers' • Trace the characteristics of Pre-Sankari era and Sankari eras' Literature.
	ASM -HC 1026	History of Assamese Literature (Post Sankari Era – Aronodoy Era)	• Trace the development of Post-Sankari Ears' Literature and its background. • Trace the development of Pre-Aronodoy Ears' Literature and its background. • Trace the development Aronodoy Ears' Literature and its background.
Core Course	ASM-RC 1016 (Core Course)	History of Assamese Language	• To know about the trend of Assamese Language. • To know original and development of Assamese Language.
	ASM-AECC 1014	Communicative Assamese	• Trace the theoretical and applied knowledge of talking and writing skill. • To know about the way of talking and writing skill.
	ASM-HG 1016	History of Assamese Language	• Trace the history of Assamese Language and its development • Explain about its original roots
Second Sem	ASM-HC 2016	An Introduction to Linguistics	• To know about the linguistics on basis of different branches of language analysis, steps and ways. • Trace the history about language study. • To know about the development of linguistics and Assamese Language.
	ASM-HC 2026	Literary Criticism	• Trace the Western Literary theory and new ways

Programme Outcome/Programme Specific Outcome/Course Outcome
Lalit Chandra Bharali College offers undergraduate courses in three streams namely, Arts, Science and Commerce.

Department of Assamese, LCBC (CBCS-2019-20)

			• Trace the Indian Literary theory and its views and ways. • To know about Indian ancient literature
	ASM-RC 2016	History of Assamese Literature (beginning to eighteen century	• To know about the pre-sankari eras' background and the authors literature. • To know about the Sankari eras' background and the authors literature. • To know about the post-sankari eras' background and the authors literature. •
	ASM-HG 2016	History of Assamese Literature (beginning to eighteen century	• To know about the pre-sankari eras' background and the authors literature. • To know about the Sankari eras' background and the authors literature. • To know about the post-sankari eras' background and the authors literature.

Course Outcome : Department of Bengali 2019-2020 Session			
Semester	**Paper**	**Topic**	**Objectives**
1st	BEN-RC -1016	Baishnab Padabali, Mangal kavya & Shaktopodaboli	• Can reconstruct the cultural heritage. • Able to understand the history of Bengali literature. • The Ideology of Shri Chaitainydev generates a new vision among the students by which they can provide concrete ideological aspects in the society.
1st	BEN-AE -1014	Bengali Spelling, Bengali Grammer & Different Essays	•Able to write Bengali language properly. •To trace the development of Bengali language and grammar. • Able to write essays in bengali.
2nd	BEN -RC- 2026	History of Bengali Literature, Sound Variation, Word Variation	• Trace the theoretical and applied knowledge of talking and writing skill. • To know about the way of talking and writing skill.
Elective Bengali			
3rd	3.1 Course-3	History of Bengali Literature (Old & Medieval Period)	•To trace the history of Bengali Literature and its development. •Can reconstruct the cultural heritage which is depicted in the Old &Medieval Bengali literature.
4th	4.1 Course-4	History of Bengali Literature (Modern Period)	•To trace the history of Bengali Lliterature and its development. •Can reconstruct the cultural heritage which is depicted in the mordern Bengali literature.
6th	6.1 Course -7	Short Story & Novel of Rabindranath Tagore	• To trace the history of Bengali Novel & Short story. • Able to know about the writings and ideology of World Poet Rabindranath Tagore. • Can generate healthy family life and thus they can be a part of the process.of building a strong society
	6.2 Course-8	Bengali Literature from Assam	• Able to understand the history of Bengali literature of Assam. •To trace the development of major trend of Bengali drama in Assam. • Able to understand the literature of neighboring society.

Major			
3rd	Ben (M) 304	History of bengali literature (Old & Medieval Period)	•To trace the history and heritage of Bengali Literature • Able to know the development of Bengali language. • Can reconstruct the cultural heritage which is depicted in the Medieval Bengali literature.
	Ben (M) 305	History of bengali literature (Medieval Period)	•To trace the history of Bengali Language and its development. •Can reconstruct the cultural heritage which is depicted in the Medieval Bengali literaturs. • The Ideology of Shri Chaitainydev generates a new vision among the students by which they can provide concrete ideological aspects in the society.
4th	Ben (M) 404	History of Bengali Language ,Chhanda & Alankar	• Able to know the history of Bengali Literature. • To know about the develcpment of Bengali script. • To explain the different types of Chhanda and Alangkara in indian.
	Ben (M) 405	Bengali Poem Modern Poetry	• To trace the development of Bengali poetry. • To explain the characterization of ancient Bengali poetry. • To discuss the trend of romantic and modern poetry through selected poem.
5th	5.1 Course -5	History of Bengali Language ,Chhanda & Alankar	• To trace the development of Bengali Language. • Able to trace the roots of modern Phonology and Morphology. • Comparing the various dialects with the standard Language, the students can re-construct and re- arrange the use of Standard language in public conversation, reading and writing. Able to understand the techniques of using ornaments (Alankar) in poetry and language. • Able to understand the classic beauty of literature. • Able to read and recite a poem properly
	5.2 Course-6	Drama	• To trace the history of Bengali Drama. • To explain about different types of Bengali Drama. • To illustrate about the future of Bengali Drama. • To draw an outline traditional and modern Bengali Drama.

PSO (Programme Specific Outcome)
Department of Bengali
LCB Collage
2019-2020 Session

1. Will be able to indulge in creating writing.

2. Will have knowledge about stage, acting skill.

3. Can take print and electronic media as profession.

4. Will acquire the knowledge of Poem recitation and theory.

5. Can focus on research and field studies.

6. Can acquire the knowledge of art and translation.

7. Will gain knowledge of editing and publishing.

8. Will acquire the knowledge of science fiction.

9. Can trace the history and heritage of Bengali language.

Department of Economics

Programmes: B.A. / B.Sc. Economics CBCS Honours, Regular and Generic

Program Specific Outcome

PSO1: The students will be provided a well-founded education in Economics.

PSO2: The structured curriculum will support the students with a sound academic development that will provide our students to prepare for further studies and career in economics.

PSO3: To provide the students with an opportunity to pursue courses that emphasise quantitative and theoretical aspects of economics.

PSO4: To provide a well-resourced learning environment, with field trips, lectures by prominent resource persons, group discussions and the like for their development in analysing and solving economics issues.

PSO5: The students are given an opportunity to update themselves with the recent trends in economic developments.

Course outcomes

Economics Honours

Semester I

Paper Eco HC 1016

1. Students will be able to comprehend the basic economic problems of production, distribution and consumption and the scope and nature of economics as a discipline.
2. Students shall be able to understand the basic economic problems of scarcity and choice.
3. The students will be able to know what are perfectly competitive markets and the short run and long run behaviour of firms under perfect competition.
4. Students shall be able to understand the working of the market under imperfect competition.
5. The students shall be able to know the conditions for a consumer to be in equilibrium with the ordinal approach to utility and the income and substitution effects of price change.
6. Students will be able to know about the unique features and concepts of the factor market, also the working of the labour market under competitive conditions in both factor and product market and under imperfect labour and product markets.

Paper Eco HC 1026

1. Students will be able to understand the basic mathematical concepts of sets, number systems and relations and functions.
2. Using examples from economic theory students shall be able to understand the meaning and graphical representation of different types of functions.
3. Students will be able to know the concepts of limit and continuity of functions and the meaning and evaluation of derivatives.
4. Students will know about the economic applications of derivatives as well.
5. With the concepts of maxima and minima of functions students will be able to know its significance in economics.
6. Students will be able to know the mathematical tool of integration and the applications of the same in economics.

Semester II

Paper Eco HC 2016

1. Students will be able to comprehend the core macroeconomic issues of the evaluation of national income, inflation, business cycle and the like.
2. Students will be able to understand the concepts of national income and he evaluation of the same.
3. Students will be able to understand the concepts and the different consequences of inflation.
4. Students shall understand the functions of money, the relation between quantity of money and prices, the meaning and determinant of demand for money.
5. The students will learn about the meaning and significance of monetary policy.
6. The students will be able to know the Classical and Keynesian income determination models.
7. Students shall be able to understand the effect of the changes in fiscal and monetary policy in the general equilibrium of the economy.

Paper Eco HC 2026

1. Students shall be able to know the meaning and use of matrices in economics.
2. The fundamental concepts of homogeneous and homothetic functions which are core to economic theory will be known to the students.
3. Students can learn the unconstrained optimising technique and its application in economics.
4. The mathematical concepts of difference and differential equations and their significance in economic theory will be known to the students.

Economics Generic and Regular

Semester I

Paper Eco RC 1016/HG 1016

1. Students will be able to know the fundamental economic problems of scarcity and choice.
2. The laws of demand and supply, the determinants of the same and the determination of market demand and the elasticity of demand will be known to the students
3. The notions of consumer and producer surplus can be well comprehended by the students.
4. The students can know about the concepts of utility, diminishing marginal utility, budget constraints and indifference curve and the determination of consumes equilibrium.
5. Students can know about what is production and production function, the ways of representing a production function and the determination of producer's equilibrium.
6. The students can know about the cost functions, the graphical representation of the different cost functions, the notions of long run and short run cost and the concepts of economies and diseconomies of scale.
7. The students can learn about perfect competition, the equilibrium of firms and industry under the conditions of perfect competition in the long run and short run.

Semester II

Paper Eco RC 2016/HG 2016

1. Concept of monopoly market, the long run and short run equilibrium, the difference between competition and monopoly will be known to the students.
2. The students can know about monopolistic and oligopoly form of the market, the long run and short run price and output determination under monopolistic competition and the different models that evaluates oligopoly price and output.
3. Students will be able to know about the unique features and concepts of the factor market, also the working of the labour market under competitive conditions in both factor and product market and under imperfect labour and product markets.
4. The students can comprehend the various instances where the market fails to determine the optimum price and output.

PSO's and CO' s of the Department of Education.

Semester	Paper Code	PSO	CO
B.A 1st Semester (Honours)	EDU-HC-1016	It aims to develop a holistic and multidimensional understanding of the topics. It attempts to approach new areas of learning and develop competencies in the students, thereby opening various avenues for self-discovery, academic understanding and employment.	i) Students will be acquainted with the sound principles of education. ii) Students will be acquainted with the important concepts of education, curriculum, democracy, discipline and freedom. iii) Students will develop knowledge about different aims of education, various types of curriculum, correlation of studies and forms of discipline. iv) Students will be familiarized with democratic ideas of modern education.
	EDU-HC-1026	DO	i) Students will be made to understand the relationship between education and psychology. ii) Students will be explained the need of educational psychology in the teaching-learning process. iii) Students will be able to describe the nature and theories of learning, and role of motivation in learning. iv) Students will understand what is memory, forgetting, attention and interest. v) Students will be able to develop the concept of intelligence, its theories and measurement
	EDU-HG-1016	DO	i) Students will be acquainted with the principles of education. ii) Students will acquire knowledge on different forms and aims of education. iii) Students will understand the concepts and importance of discipline and freedom. iv) Students will be able to acquire knowledge about the concepts of national integration and international understanding.
B.A 2ND SEMESTER (Honours)	EDU-HC-2016	DO	i) Students will be able to know the concept of philosophy and its relationship with education. ii) Students will be able to understand the educational implications of different Indian and Western schools of Philosophy.

			iii) Students will know the concept of sociology and its relationship with education. iv) Students will be able to develop understanding about the concept of educational sociology, social groups and socialization.
	EDU-HC-2026	DO	i) Students will be able to recount the concept of ancient Indian education system. ii) Students will be able to describe the education system in ancient India, particularly Vedic Education. iii) Students will be able to examine the education system in medieval India. iv) Students will be able to analyse the education system during British period.
	EDU-HG-2016	DO	i) Enable the students to understand the significance of the adolescence period in human life. ii) Enable the students to know about various problems associated with this stage. iii) Enable the students to understand the development aspects of adolescence, importance of adolescence period and problems associate with this stage.
B.A 1ST SEMESTER (Regular)	EDU-RC-1016	It aims to develop a holistic and multidimensional understanding of the topics. It attempts to approach new areas of learning, develop competencies in the students thereby opening various avenues for self-discovery, academic understanding and employment.	i) Students will be acquainted with the principles of education. ii) Students will be able to gain knowledge about different forms and aims of education. iii) Students will understand the concepts and importance of discipline and freedom. iv) Students will be able to acquire knowledge about the concept of national integration and international understanding.
B.A 2ND SEMESTER (Regular)	EDU-RC-2016	DO	i) Enable the students to understand the significance of the adolescence period in human life. ii) Enable the students to know about the

				various problems associated with this stage. iii) Enable the students to understand the development aspect of adolescence, importance of adolescence period and problems associated with this stage.

Activities organized by the Department of Education in the session August 2019 to August 2020.

Sl. No	Date	Activities
1	17-08-2019	Educational tour to Srimanta Sankardeva Kalakshetra.
2	5-09-2019	Organized Teachers day and felicitation programme.
3	21-09-2019	Organized parent teacher meeting.
4	19-10-2019	Alumni meeting.
5	6-11-2019	Interaction session with students regarding examination tips.
6	14-03-2020	Awareness programme on Covid-19
7	15-10-2020	Inauguration of Book.

Students Strength (2019-20)

	Enrolled		Appeared in exam		Result (passed)	
Semester	Major	General	Major	General	Major	General
B.A 1st year	8		7			
B.A 2nd Year	10		10		10	
B.A 3rd year	15		15		15	

BA GENERAL ENGLISH:

The aim of this course is to provide the student an opportunity to read and respond to representations issues in contemporary life and culture in the English Language. The selection of texts is aimed to present themes and topics that are stimulating and informative. It also enables the students to develop grammatical skills.

B.A GENERAL ENGLISH

SEMESTER	COURSE CODE	SUBJECT	COURSE OUTCOME
1	I	Prose	• Able to appreciate the role of Gandhi in the freedom struggle in "The Swadeshi Movement". • Able to interpret ideas of colonialism with reference to George Orwell. • Able to familiarise with Buddhist mythological stories like "Angulimala" and "Running Water". • Able to understand ideas of nationalism. • Able to understand ideas about colonialism in "Shooting an Elephant". • To familiarize students with 20th century writings. • To acquaint students with the genre of American plays during World War II. • Able to situate the question of identity and nationalism from different perspectives by reading "Naipaul's India and Mine"

B.A GENERAL ENGLISH

2	II	Poetry	• Able to critically appreciate the poems which reflect the socio-cultural and political interest of the period • Able o familiarize with the major poet like Jayanta Mahapatra and his unique contribution to Indian English literature • Able to familiarize with major writers from different nations like Wole Soyinka from Nigeria, Sezmus Heany from Ireand, Lorca from Spain and the distinguished significance of their writings • Able to have a good overview of grammatical patterns like changing voice, narrations, tag questions, use of determiners etc

B.A GENERAL ENGLISH

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

TO DEVELOP THE GRAMMATICAL SKILLS OF THE STUDENTS.

ENGLISH (HONOURS)			
SEMESTER	**COURSE CODE**	**SUBJECT**	**COURSE OUTCOME**
I	**ENG-HC-1016**	**Indian Classical Literature**	▪ **Able to familiarize students to the rich Indian heritage through the ancient classics** ▪ **To think laterally about literatures of the world and the possibility of cultural exchange** ▪ **Introduces students to Indian Literature through English translations**
I	**ENG-HC-1026**	**European Classical Literature**	▪ **Able to have an overview of European Classical writers** ▪ **To understand the great epics belonging to the classical period** ▪ **Able to understand the concepts and relate it to their reading of the epics**
II	**ENG-HC-2016**	**Indian Writing in English**	▪ **To understand the place of Indian English writing in the larger field of English Literature** ▪ **To develop familiarity with the issues pertaining to pre and post -I** ▪ **Independence in India** ▪ **To familiarize themselves with**

			the use of literary forms inthe Indian English Writing
II	**ENG-HC-2026**	**British Poetry and Drama:14th -17th centuries**	▪ **Able to relate the genre of drama in the context of Renaissance and Elizabethan Age** ▪ **Able to acquaint themselves with seminal issues and preoccupations of the writers and their ages as reflected in the text**
III	**ENG-HC-3016**	**History of English Literature and forms**	▪ **Comprehend the historical development of each literary form** ▪ **Gain understanding of the contexts in which literary forms and individual texts emerge** ▪ **Able to examine texts as representative of broad generic explorations** ▪ **Familiarize themselves with the chronology of the different periods of British history and the subsequent literary developments**
III	**ENG-HC-3026**	**American Literature**	▪ **Familiarize with the main currents of American Literature in its social and cultural**

			contexts ▪ **Able to trace the gradual development of the American society from the beginning of Modernism to the present** ▪ **Able to relate the writings in the socio-political and cultural contexts**
III	**ENG-HC-3036**	**British Poetry and Drama: 1th and 18th centuries**	▪ **Able to familiarize students with the diverse writings in British Literature during 17th and 18th centuries** ▪ **Able to acquaint themselves with the political and social changes prevailing in Britain during that period** ▪ **Able to comprehend the impact of literature on society**
IV	**ENG-HC-4016**	**British Literature: The 18th century**	▪ **Acquaint students with British Literature in the 18th century** ▪ **Able to familiarize with the non-fictional prose and poetry in the English language of the 18th century** ▪ **Able to have an overview of the prolific writings that the age**

			produced
IV	**ENG-HC-4026**	**British Romantic Literature**	▪ **To familiarize with the precursors of the Romantic Period** ▪ **Appreciate the essence of the Romantic vision**
IV	**ENG-HC-4036**	**British Literature: The 19th century**	▪ **Able to appreciate the efforts of poets and writers in reviving the works of the previous era** ▪ **Acquaint themselves with the preoccupations of the Victorian period through the literary writings**
V	**ENG-HC-5016**	**British Literature of the 20th century**	▪ **Able to acquaint themselves with the era of Modernism in 20th century England** ▪ **Able to comprehend the new forms and idiom related to the new spirit of Modernism** ▪ **Familiarize with the ethos of Postmodernism through a reading of poetic and fictional works**
V	**ENG-HC-5026**	**Women's Writing**	▪ **Able to obtain understanding of 19th and 20th century writings by women which shows representation of**

			women across diverse cultural milieu ▪ **Acquaint themselves with the women's voices through a variety of genres and analyse them** ▪ **Gain understanding of the ideas contained in one of the earliest feminist treatises of the Western world**
VI	**ENG-HC-6016**	**Modern European Drama**	▪ **Familiarize themselves with the innovative dramatic works of playwrights across Europe** ▪ **Gain an understanding of the avant-garde movements, trends, dramatic devices and techniques during the period of Modernism**
VI	**ENG-HC-6026**	**Postcolonial Literatures**	▪ **Able to comprehend the effects of Colonialism in the Postcolonial era** ▪ **Able to appreciate the poems, short stories and novels from Postcolonial literatures across the world** ▪ **Familiarize themselves with the regional and**

			cultural differences as well as the shared experiences of the Postcolonial condition
GENERAL ENGLISH			
I	**ENG-CC-1016**	**English-I**	▪ **Able to read and respond to representations of issues in the contemporary life and culture in the English language** ▪ **Acquaint themselves with the stimulating, insightful and informative themes and topics**
II	**ENG-CC-2016**	**English-II**	▪ **able to appreciate poems from various literary writings across diverse cultures** ▪ **Apply their knowledge of the English language in correct grammatical expression**
ALTERNATIVE ENGLISH			
III	**ALT-CC-3016**	**Alternative English-I**	▪ **Able to familiarize with the major genres of English Literature** ▪ **To critically appreciate the poems in the literary context** ▪ **Able to relate to the genre of drama in the English literary tradition**

IV	**ALT-CC-4016**	**Alternative English-II**	▪ **Familiarize with the various forms of literature, texts and their contexts** ▪ **Enable them to understand literary representations and a writers engagement with the socio-cultural and political backdrop**
AECC			
I	**ENG-AE-1014**	**English Communication**	▪ **Able to develop the overall skills in the English Language** ▪ **Enhance their vocabulary in the academic use of the language** ▪ **Able to speak according to the context with confidence** ▪ **Able to use effective study skills for other courses** ▪ **Develop academic writing skills** ▪ **Able to approach an academic text confidently**
SEC			
III	**ENG-SE-3014**	**Creative Writing**	▪ **Able to be proficient in reading and writing** ▪ **To effectively communicate ideas feelings and experiences** ▪ **Able to explore and incrementally developthe ability**

			to use the language ▪ **Develop analytic thinking skills**
IV	**ENG-SE-4014**	**Translation: Principles and Practice**	▪ **Able to acquire basic skills in translation** ▪ **Acquaint themselves to the field of translation studies** ▪ **Able to gain training in practical translation**

Programme Specific Outcome (PSO)
The new BA English Syllabus is an innovative and groundbreaking one as it is creatively designed to prepare students to understand and use the English language effectively. It introduces them to some of the best examples of English writing in both Indian Classical Literature and Classical Literature. The new course offers students opportunities to think laterally about literatures of the world. It also enables students to have an exposure to the rich Indian heritage through the ancient classics. For example, they will gain understanding of the great Indian Epics through their reading of the Mahabharata and also classics like Kalidasa's Shakuntala. Sangam Literature, a form of Tamil Literature also finds expression in books like Cilappatikaram. In short, this syllabus is expected to encourage and equip the students to take logical steps in their career. After majoring in English, students can pursue careers in diverse range of professional fields including teaching, creative writing, journalism, business outsourcing and the like.

Name of the U.G. CBCS program: B.A (Honours) History :----

Program outcomes:-The B.A (Hons) History Arts program will able to help us understand our past which in turns allows us to understand our present. If we want to know how and why our world is the way it is today, we have to look to history for answers. People often say that “History repeats itself”, but if we study the success and failures of the past, we may, ideally be able to learn from our mistakes and avoid repeating them in the future. Studying history can provide us with inside into our cultures with which we might be less familiar, thereby increasing cross cultural awareness and understanding.

It is important to study history so one may learn about past human behavior that is relevant to the intellectual growth and development of an individual. Studying the events of the past give us an understanding of how the world came to be, not only in your world but around the world including all cultures of people as well as nature. By learning about the causes and effects of events in history, people can learn better ways to deal with conflicts among nation and individuals. Studying the history of environmental changes can enhance a healthier lifestyle for mankind, as well as prevent the extinction of plants and animals, which could disturb our ecosystem. Although human behaviour is unpredictable at times, a better understanding through the study of history, can provide valuable insight for our future generation.

To learn the general course of human history in multiple years of the world. To understand the world contextually that is, to interpret human experience and the meanings people have given them in relationship to the place and time in which they occurred. To analyze and evaluate both evidence and arguments. Students will learn to explain how and why important events happen and change over time occurs. They will learn to create knowledge and communicate it to others both orally and in written.

Program Specific Outcomes:-

Students will demonstrate knowledge of the chronology, narrative, major events, personalities and turning points of the history of the United States, Europe, and at least one non-western area. They will offer multi-casual explanations of major historical developments based on a contextualized analysis of interrelated political, social, economic, cultural and intellectual processes. They will correctly extract evidence from primary sources by analyzing and evaluating them in relation to their cultural and historical context (avoiding anachronism, ethno centrism, and ethno Orphism) and use that evidence to build and support an argument. Students will evaluate secondary historical sources by analyzing them in relation to the evidence that supports them, their theoretical frame works, and other secondary historical literature. Students will write an original research paper that to catch and synthesizes relevant primary and secondary sources and has a clear, co-he rent and plausible argument, logical structure, correct grammar and proper references (footnotes and bibliography).

Course Structures and Syllabus

Course Code	Subject	Course Outcome
His – HC - 1016 History of India-1 Sem -1	History	After the completion of this paper, the student will be able to explore and effectively use historical tools in reconstructing the remote past of ancient Indian and proto history. The student will be able to analyses the various stages of evolution of human cultures and belief systems
His- 1026 Sem-2 Social formation and cultural patterns of the ancient world		After the completion of this paper, the student will be able to explain the process and stages of the evolution of the verity of cultural patterns throughout antiquarian period in History. They will be able to relate the connection between bronze age civilization in the ancient world as well as development of slave and polis societies in ancient Greece.
Course code	subject	Course outcome
Semester-2 His-HC-2016: History of India –		Student will be able to explain the economic and socio –cultural connection ,transition and stratification during houses. They will able to learn political – administrative nuances of early Indian History from 300 BCE to 300 CE
HIS-HC- 2026: Social formations and cultural patterns of the Mediaeval world		Student will be able to analyse and explain historical socio –political ,economic patterns of the medieval world. They will be able to describe the emergence ,growth and decline of various political administrative and economic patterns and the resultant changes therein.
Course code	subject	Course outcome
Sem-3 His- HC- 3016 – History of India iii (c.750-1206)		This paper will enable the student to relate and explain the developments in India in its political and economic fields and its relation to the social and patterns between c.700 to 1206. They will be able to analyse indias interaction with another wave of

		foreign influence and the changes brought in its wake in the period.
Course code	subject	Course outcome
Semester -3 His –HC-3026: Rise of the modern west-1		The student will be able to learn the major trends and developments in the western world between the 14th to the 16th century. They will be able to explore the significance historical shifts and events and resultant effects on the civilizations of Europe
His-HC-4016 History of India iv (1206-1550)		Student will be able to learn political and administrative history of India of that period.
HiS-se-3014 Historical Tourism in North East India.	Skilled enhancement course (sec)1	Student will able to learn tourism in north east India and historical monuments, culture along with ecological elements and various places of north east India.
Course code	subject	Course outcome
Semester -4 His-HC- rise of modern west ii		The student will be able to learn major trends and development in the western world.
Semester -4 His- HC- 4026 : History of India v 1550-1605		Student will be able to learn the circumstances and historical shifts and different admistrative system and socio culture and economy of the time.
His –Hc – 4036 History of India vi (c1605-1750)		Student will be able to locate the linkage of the history of India under the Mughal rule.
HIS-SE- 4014 Oral culture and oral History	Skilled Enhancement course (sec) 2	Student will be able to learn interrelationships of structures or events in the context of brooder socio and cultural framework of societies through memory and use oral history to preserve oral culture and local history.
Semester -5th His-Hc 5026 ; History of modern Europe -1 c-1780-1939		Student will be able to learn historical evolution and political and socio economic development in Europe .
His –HC -5026; History of India vii c 1750-1857		Student will be able to relate the circumstances leading to the consolidation of colonial rule over India and their consequences.
His –HE -5016 History of Assam up to c,1228	Elective Discipline specific (sec4)	Student will be acquainted with major stages of developments in the political social and cultural history of Assam during the early times.

His- He- 5026 History of Assam c 1228-1826	DSE	Student will able to learn major stages of development in the political ,social and cultural history of Assam
Semester 6th His-Hc -6016 History of India viii c 1857- 1950)		Student will be able to learn of British colonial exploitation, the social mobilization during the period 1857-1950 and also techniques of Indian resistance to British policies.
His- Hc-6026;History of modern Europe ii c 1780-1939		After the completion of this course ,the student will also able to analyse the historical developments in Europe between 1780-1939.
His –He-6016 History of Assam c 1826-1947	Elective discipline specific	Student will be able to describe the period of British rule in Assam after its annexation by the imperialist forces, and growth of nationalism in Assam
His- He -6026 Assam since independence	Elective discipline specific	Student will be able to learn after partition and other socio economic development in post independence .
Semester 1st His- hc-2016 History of India (from earliest times to c 1206)	Elective generic	Student will be able to learn state formation and its development of imperial state structure and polity ,economy and society in early India.
Semester 2 His-Hc 2016 History of India 1206-1757		Student will be able to learn the political and social development in India between 1206-1757.
Semester3 His-hc-3016 History of India c 1757-1947		Student will be able to learn the major factors that led to the establishment and consolidation of British rule in India.
Semester 4 HIS- HG-3016 Social and economic history of Assam.		Student will be able to analyze and explain the socio economic history of Assam including caste system ,religion, trade and commerce ,economy education the emergence of middle class development of literature and press etc,

PSO and CO
Hindi Department
LCB College

Programme Specific Outcome

Hindi subject studying in degree level is important for student to develop their literary aptitude and linguistic foundation. The study of Hindi grammer helps the students to enhance the Hindi language. Students will attain knowledge of Hindi language and literature. They will learn application of functional Hindi and translation.

Course outcomes BA Hindi (MIL)
CBCS III Sem.

Paper	*Name of the paper*	*Course outcome*
1	Hindi Kavya Dhara	Students will study in this paper poetry related to the literary and historical contexts studies in the previous paper.

Programme Specific Outcome (Hindi MIL)

Students will be able to understand the relation between society, country and literature and the role played by Hindi literature in the past and present.

Students will develop a philosophy of the life inspired by the vision of eminent writers.

Students will gain cultural and environmental conciousness.

Students will be introduced to Hindi poetry of Bhaktikal and modern age.

Students will understand the role by the poets of Hindi Kavya-Dhara in ‘Bhaktikal’ in literature and society and the strategy of convering worship to a struggle for cultural freedom.

Students will get to know the socio-economic and cultural conditions of medieval and modern indian society.

Course outcomes BA Hindi
CBCS I Sem.

Paper	*Name of the paper*	*Course outcome*
1	Vyakaran and sampresan	It helps the students to know about deffnition of language and linguistics.it inspires students to learn about the characteristics of language. It shows the importance of language. It covers the knowledge of phonetics, phonology and morphology.It introduces the students to syntex,semanties and vocabulary.

COs and Pos of the Department of Philosophy under CBCS 2019-2020

Course outcome for 1st Semester-

For Regular class and Generic class courses are same.

Paper- General Philosophy

Chapter Realism and Idealism-

- Realism and Idealism helps students to gain knowledge about how nature behaves and uplift their mental ability to differentiate between world and reality.

Chapter Substance and Categories-

- Substance and categories makes student understand about the nature of different substance i.e God, world, soul etc.

Chapter Deism, Pantheism and Panentheism-

- Deism, Pantheism and Panentheism helps students to know the relationship between God and World.

Chapter Proofs for the Existence of God-

- This chapter helps students to know about the different proofs and causes for the existence of God.

PROGRAMME SPECIFIC OUTCOME-

- Chapter -Realism and Idealism- To understand about the knowledge of reality.
- Chapter -Substance and Categories- To have a clear idea about substance and reality.
- Chapter- Deism, Pantheism and Panentheism- To grab knowledge about the different beliefs of God and world.
- Chapter – Proofs for the existence of God- To get a brief understanding of the existence of God.

Course outcome for 2nd Semester-

Paper- Indian Philosophy

Chapter- Indian Philosophy

- Development of Indian Philosophy chapter helps students to know about the different Indian Philosophical schools and their belief in valid sources of knowledge.

Chapter Buddhism-

- Buddhism helps students to attain mental peace and to deal with several kinds of suffering and attain liberation.

Chapter Samkhya-

- Samkhya chapter helps students to know about the Evolution of the world.

Chapter Samkara and Ramanuja-

- Students will be able to learn about Samkara and Ramanuja's concept of Brahman and World.

PROGRAMME SPECIFIC OUTCOME-

- Chapter- Development of Indian Philosophy- To acquire knowledge about Indian Philosophical system.
- Chapter- Buddhism- To know about Budhha's Four Noble Truth.
- Chapter- Samkhya- To understand about the different evolution.
- Chapter- Samkara and Ramanuja- To know about Maya.

PO of the 1st Semester and 2nd Semester student-

- Students can enhance them in different competitive exam.
- They can pursue teaching line as their profession.
- They can apply for civil service exam.
- They can try for start-up.
- They can open NGO's.
- They are eligible for any line that an average graduate is eligible for.

Programme Specific Outcomes (PSOs) and Course Objectives (COs):
Department of Political Science
L.C.B. College, Maligaon, Guwahati-11

Subject: Political Science

Programme Specific Outcome (PSO):

- Versatile nature of political science provides immense scope to the learners in getting degree in different fields- sociology, peace and conflict studies, public administration, international relation, northeast studies, and women studies.
- Versatile nature of political science widens knowledge in different social perspectives.
- Makes aware of rights, duties, and responsibilities of citizens and also about functioning of government system, election process.
- Consolidating a tradition of excellence, the ancient, medieval and modern political thought provides immense scope to the learners for their career building.
- Political science is the scientific study of the institutions, forms of thought and organizations as well as various actors.
- The subject provides wide marketable job opportunity in national and international affairs.
- The study of political science inspires and helps the learners to become better statesmen, political leaders, better orators who can guide society and nation in the right path.
- It facilitates social habits, attitude, and cooperation among the students to make them socially adjustable.
- Helps to understand the nature and developments in national and international politics.
- Helps to develop knowledge of administrative studies with special reference to Indian administrative structures and practices.

Course Objectives (COs):

Subject: Political Science (Honours)

Semester	Course Code	Course Name	Course Objectives (COs)
I	POL HC 1016	Understanding Political Theory	➢ This course is divided into two sections. Section A introduces the students to the idea of political theory, its history and approaches, and an assessment of its critical and contemporary trends. Section B is designed to reconcile political theory and practice through reflections on the ideas and practices related to democracy.
	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 these conflicts in constitutional provisions, and shows how these have played out in political practice. It further encourages a study of state institutions in their mutual interaction, and in interaction with the larger extra-constitutional environment.
II	**POL HC 2016**	Political Theory-Concepts and	➢ This course is divided into two sections. Section A helps the student familiarize with the basic normative concepts of political

		Debates	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.

Subject: Political Science (Regular)

Semester	Course Code	Course Name	Course Outcomes (COs)
I	POL RC 1016	Introduction to Political Theory	➢ This course aims to introduce certain key aspects of conceptual analysis in political theory and the skills required to engage in debates surrounding the application of the concepts.
II	POL RC 2016	Indian Government and Politics	➢ This course acquaints students with the constitutional design of State structures and institutions, and their actual working overtime. The Indian Constitution accommodates conflicting impulses (of liberty and justice, territorial decentralization and a strong union, for instance) within itself. The course traces the embodiment of some of these conflicts in constitutional provisions, and shows how these have played out in

			political practice. It further encourages a study of state institutions in their mutual interaction, and in interaction with the larger extra-constitutional environment.

2. BACHELOR OF COMPUTER APPLICATIONS Programme Details

2.1 Programme Objectives:

Students who choose BCA Programme , develop the ability to think critically, logically, analytically, and to use and apply current technical concepts and practices in the core development of solutions in the form of information technology.

The knowledge and skills gained with a degree in computer science prepare graduates for a broad range of jobs in education, research, government sector, business sector and industry.

The program covers the various essential concepts in Computer Science. The course lays a structured foundation of Computer Fundamentals, Numerical Methods, Data Structure, Algorithm and Complexity Analysis, Software Engineering, Programming Concepts in various languages (C, C++, JAVA etc.), Computer Networking, System Administration, Operating System, Computer Architecture, Microprocessor, Web Technology, Computer Graphics and Database Management System etc.

An exceptionally broad range of topics covering current trends and technologies in Computer Science: Advanced Web Technology, Mobile Application, Animation, Data Mining etc. Also, to carry out the hand on sessions in computer lab using various programming languages and tools to have a deep conceptual understanding of the topics to widen the horizon of the students' self- experience.

2.2 Programme Learning Outcomes:

The completion of the BCA Program shall enable student to:

(i) To communicate technical information both orally and in writing.
(ii) Apply the knowledge gained in core courses to a broad range of advanced topics in Computer Science, to learn and develop sophisticated technical products independently.
(iii) To design, implement and evaluate Computer based system, process, component or program to meet desired needs by critical understanding, analysis and synthesis.
(iv) Identify applications of Computer Science in other fields in the real world to enhance the career prospects.
(v) Realize the requirement of lifelong learning through continued education and research.
(vi) Use the concepts of best practices and standards to develop user interactive and abstract application.
(vii) Understand the professional, ethical, legal, security, social issues and responsibilities.

2. B.Sc. in INFORMATION TECHNOLOGY Programme Details

2.1 Programme Objectives:

Students who choose B. Sc in IT Programme, develop the ability to think critically, logically, analytically and to use and apply current technically concepts and practices in the core development of solutions in the form of Information Technology.

The knowledge and skills gained with a degree in Computer Science prepare graduates for a broad range of jobs in education, research, government sector, business sector and industry.

The programme covers the various essential concepts in Computer Science. The course lays a structured foundation of Computer Fundamentals, Numerical Methods Data Structure, Algorithm and Complexity Analysis, Software Engineering, Programming Concepts in various languages (C, C++, JAVA, visual Basic etc.), Computer Networking, System Programming and Administration, Operating System, Digital Image Processing, Embedded System, Computer Architecture, Microprocessor, PHP Programming, Numerical Methods, Combinatorial Optimization, Computer Graphics and Database Management Systems.

An exceptionally broad range of topics covering current trends and technologies in Computer Science: Programming in PYTHON, Cyber Security, Data Mining R- Programming, Data Sciences, Artificial Intelligence and Android Programming. Also to carry out the hand on sessions in Computer Lab using various Programming Languages and tools to have a deep conceptual understanding of the topics to widen the horizon of students self experience.

2.2 Programme Learning Outcomes:

The completion of the B.Sc. in IT Programme shall enable student to:

(i) To communicate technical information both orally and in writing.
(ii) Apply the knowledge gained in core courses to a broad range of advanced topics in Computer Science, to learn and develop sophisticated technical products independently.
(iii) To design, implement and evaluate Computer based system, process, component or program to meet desired needs by critical understanding, analysis and synthesis.
(iv) Identify applications of Computer Science in other fields in the real world to enhance the career prospects.
(v) Realize the requirement of lifelong learning through continued education and research.
(vi) Use the concepts of best practices and standards to develop user interactive and abstract application.
(vii) Understand the professional, ethical, legal, security, social issues and responsibilities.

Program Objective Computer Science Honours

Students who choose B.Sc. (Honours) Computer Science Programme, will develop the ability to think critically, logically, analytically and to use and apply current technical concepts and practices in the core development of solutions in the form of Information Technology. The knowledge and skills gained with a degree in Computer Science prepare graduates for a broad range of jobs in Education sector, Research field, Government sector, Business sector and Industry. The program covers the various essential concepts in Computer Science. These are included as core course like Structured Foundation of Computer Fundamentals, Computing Methods, Data Structure, Software Engineering, Programming Concepts in various languages (C, C++, Java, Visual Basic etc.), Design and Analysis of Algorithm, Theory of Computation, System Programming, Computer Networking, System Administration, Operating System, Computer Architecture, Microprocessor, PHP programming, Numerical Methods, Computer Graphics and Database Management System. An exceptionally broad range of topics covering current trends and technologies in Computer Science like - Programming in Python, Information Security and Cyber Laws, Data Mining, R-Programming, E-commerce, Data Sciences, Internet Technologies, Artificial Intelligence, Android Programming, UNIX/ LINUX programming etc are included in the course. Hands on sessions in Computer Lab using various Programming languages and tools will enable students to deal with real life problems which will lead to better understanding of the topics and will also widen the horizon of students' self-experience.

Course outcome (2020)Major Course in Computer Science

Semester	Paper Code	Paper Name / Topics	Course Outcomes(CO) The students are able to :
Semester -1	CSC-HC-1016	Programming Fundamentals using C/C++	1. Learn to develop simple algorithms and flow charts to solve a problem. 2. Develop problem solving skills coupled with top down design principles. 3. Learn about the strategies of writing efficient and well-structured computer algorithms/programs. 4. Develop the skills for formulating iterative solutions to a problem. 5. Learn array

			processing algorithms coupled with iterative methods. 6. Learn text and string processing efficient algorithms. 7. Learn searching techniques and use of pointers. 8. Understand recursive techniques in programming.
	CSC-HC-1026	Computer System Architecture	1. To make students understand the basic structure, operation and characteristics of digital computer. 2. To familiarize the students with arithmetic and logic unit as well as the concept of the concept of pipelining. 3. To familiarize the students with hierarchical memory system including cache memories and virtual memory. 4. To make students know the different ways of communicating with I/O devices and standard I/Ointerfaces.
Semester – 2	CSC-HC-2016	Programming in JAVA	1. Knowledge of the structure and model of the Java programming language, 2. Use the Java programming language for various programming technologies 3. Develop software in the Java programming language, 4. Evaluate user requirements for software functionality required to decide whether the Java programming language

			can meet user requirements
	CSC-HC-2026:	Discrete Structures	1. Understand the notion of mathematical thinking, mathematical proofs, and algorithmic thinking, and be able to apply them in problem solving. 2. Understand the basics of combinatorics, and be able to apply the methods from these subjects in problem solving. 3. Be able to use effectively algebraic techniques to analyse basic discrete structures and algorithms. 4. Understand asymptotic notation, its significance, and be able to use it to analyse asymptotic performance for some basic algorithmic examples. 5. Understand some basic properties of graphs and related discrete structures, and be able to relate these to practical examples.
Semester – 3	CSC-HC-3016:	Data Structure	1. To be familiar with fundamental data structures and with the manner in which these data structures can best be implemented; become accustomed to the description of algorithms in both functional and procedural styles 2. To have a knowledge of complexity of basic operations like insert, delete, search on these data structures. 3. Ability to choose a data structure to suitably model any data used in computer applications. 4. Design programs using various data structures

			including hash tables, Binary and general search trees, heaps, graphs etc. 5. Ability to assess efficiency tradeoffs among different data structure implementations. 6. Implement and know the applications of algorithms for sorting, pattern matching etc.
	CSC-HC-3026:	Operating System	1. Describe the important computer system resources and the role of operating system in their management policies and algorithms. 2. To understand various functions, structures and history of operating systems and should be able to specify objectives of modern operating systems and describe how operating systems have evolved over time. 3. Understanding of design issues associated with operating systems. 4. Understand various process management concepts including scheduling, synchronization, and deadlocks. 5. To have a basic knowledge about multithreading. 6. To understand concepts of memory management including virtual memory. 7. To understand issues related to file system interface and implementation, disk management. 8. To understand and identify potential threats to operating systems and the security features design to guard against them. 9. To have sound knowledge of various types of operating systems including Unix

			10. Describe the functions of a contemporary operating system with respect to convenience, efficiency, and the ability to evolve.
	CSC-HC-3036:	Computer Networks	1. Understand the structure of Data Communications System and its components. Be familiarize with different network terminologies. 2. Familiarize with contemporary issues in network technologies. 3. Know the layered model approach explained in OSI and TCP/IP network models 4. Identify different types of network devices and their functions within a network. 5. Learn basic routing mechanisms, IP addressing scheme and internetworking concepts. 6. Familiarize with IP and TCP Internet protocols. 7. To understand major concepts involved in design of WAN, LAN and wireless networks. 8. Learn basics of network configuration and maintenance. 9. Know the fundamentals of network security issues.
Semester-4	M401	Operating System	Basic principles and working of Operating Systems
	M402	Database Management System	Basic principles and working of Database management system
	M403	Practical Operating System DBMS	Uses of OS system calls, resource management. Hands on experiments on creating database and writing Queries.
Semester-5	M501	Object Oriented Programming using C++	Concepts of Object Oriented Programming and implementation using C++

			programming language
	M502	Computer Oriented Numerical Methods and Statistical Techniques	Numerical method and statistical techniques used for different computations and analysis
	M503	Computer Networks	Study on OSI and TCP/IP model
	M504	Microprocessor and Assembly Language Programming	Study on 8085 microprocessor and assembly language programming techniques
	M505	Practical Object Oriented Programming Computer Networks	Hands on experiments on C++ and socket programming
	M506	Practical Computer Oriented NMST Microprocessor and Assembly Language Programming	Hands on experiments on different numerical algorithms and use of 8085 microprocessor kit for programming
Semester-6	M601	Automata Theory and Languages	Study on abstract machines, automata and formal languages.
	M602	Web Technologies	Study on different technologies used in web application development
	M603	System Administration using Linux	Study on different activities performed by a Linux System Administrator.
	M604	Practical Web Technologies System Administration using Linux	Hands on experiments on different web technologies and system administration activities.
	M605	Project	Exposure to real-life projects/ analyze, design and implement own imagination towards designing an application or system software.

Name of the UG-CBCS Program: B.Sc. (Regular) Electronic Science

Program Outcomes:

The B.Sc. (Regular) Electronic Science program will

- Create basic know how and training to pursue higher study in the field of electronics and related discipline and provide them a dignified way of livelihood.
- Generate skilled manpower for industrial and research organizations in the field of electronics and related areas.
- Enable development of small and large scale entrepreneurship and management projects for startup programs and self employment generation schemes.

Program Specific Outcomes:

B.Sc. (Regular) Electronic Science Passed out Students will be

- Able to design and fabricate electronic systems that can be used for solving real life problems
- Capable of pursuing related professional assignments and confident enough to take up electronics as a career and contribute towards the well being of the society.

Detailed Course Structure CBCS for B.Sc(Regular) Electronic Science:

Semester-I

S.No	Paper/Course Code	Name of the Paper/Course	Course Objectives	Course Outcomes
01	ELE-RC-1016	**Core Paper-1:** Network Analysis and Analog Electronics	This course will enable students to learn fundamentals of KCL, KVL, Network theorems and basic semiconductor devices	By the end of this course, students will be able to ▪ Explain fundamental theory of KCL, KVL, Network theorems and basic semiconductor devices ▪ Design and analyze basic electronic circuits and networks ▪ Solve basic mathematical problems

				related to networks and electronic devices

Semester-II

S.No	Paper/Course Code	Name of the Paper/Course	Course Objectives	Course Outcomes
01	ELE-RC-2016	**Core Paper-4**: Linear and Digital Integrated Circuits	This course will enable students to learn operation of integrated electronic devices and their applications	By the end of this course, students will be able to ▪ Explain operation and electrical characteristics of basic analog and digital integrated electronic devices. ▪ Design analog and digital circuits with integrated circuits

Semester-III

S.No	Paper/Course Code	Name of the Paper/Course	Course Objectives	Course Outcomes
01	ELE-RC-3016	***Core Paper-7***: Communication System	This course will enable students to understand fundamental of electronic communication process and communication systems	By the end of this course, students will be able to ▪ Describe functional blocks of electronic communication system and sources of noise ▪ Compare and contrast amplitude, frequency and angle modulation systems ▪ Illustrate pulse modulation and digital communication techniques
02	ELE-SE-3014	**Skill Enhancement Course-1**: Computational Physics	The aim of this course is to introduce hands on	By the end of this course, students will

			training based computer programming and numerical analysis but to emphasize its role in solving problems in Physics and Science.	be able to ▪ Explain application of computational skills in science and engineering ▪ Write FORTRAN programs for solving mathematical problems ▪ Demonstrate skills for using LATEX in preparing and writing scientific papers, reports etc

Semester-IV

S.No	Paper/Course Code	Name of the Paper/Course	Course Objectives	Course Outcomes
01	ELE-RC-4016	**Core Paper-10**: Microprocessor and Microcontroller	This course will enable students to learn architecture and programming of microprocessors and microcontrollers	By the end of this course, students will be able to ▪ Compare and contrast microprocessor and microcontroller ▪ Develop algorithm and write assembly language program for 8085 and 8051 ▪ Interface basic I/O devices with microprocessor and microcontroller
02	ELE-SE-4014	**Skill Enhancement Course-2**: Electrical Circuits & Network Skills	The aim of this course is to enable the students to design and trouble shoots the electrical circuits, networks and appliances through hands-on mode	By the end of this course, students will be able to ▪ Explain basic fundamentals of AC and DC currents, electrical symbols and drawing ▪ Compare different types of AC and DC machines used in domestic and industrial

				environment ▪ Demonstrate use of basic tools in installation and maintenance of electrical equipments

Semester –V

S.No	Paper/Course Code	Name of the Paper/Course	Course Objectives	Course Outcomes
01	ELE-RE-5016	**Elective Paper-1**: Power Electronics	This course will be able to make students understand basic fundamentals of power electronic devices and systems	By the end of this course, students will be able to ▪ Explain characteristics of power electronics devices ▪ Design power converter circuits, choppers etc. ▪ Analyze performance of basic electrical machines related to power electronics
02	ELE-SE-5014	**Skill Enhancement Course-3**: Renewable Energy and Energy Harvesting	The aim of this course is not just to impart theoretical knowledge to the students but to provide them with exposure and hands-on learning wherever possible	By the end of this course, students will be able to ▪ Explain the sources of renewable energy sources and their benefits ▪ Demonstrate working principles of energy harvesting from renewable sources of energy

Semester-VI

S.No	Paper/Course Code	Name of the Paper/Course	Course Objectives	Course Outcomes
01	ELE-RE-6016	**Elective Paper -4**: Project Work/ Dissertation	This elective course is meant for students to acquire advanced practical skill / knowledge by doing experimental investigation on a given topic of	By the end of this course, students will be able to ▪ demonstrate creativity and critical thinking ability ▪ gain confidence in application of

			Electronics with an advisory support from a teacher / faculty member. It involves application of knowledge in solving / analyzing /exploring a real life situation / difficult problem. This paper is meant to be introduction of research component/concept in Under-Graduate Courses	theoretical knowledge to practical aspects ▪ Design circuits, PCB and solder components on the PCB
02	ELE-SE-6014	**Skill Enhancement Course-4**: Weather Forecasting	The aim of this course is not just to impart theoretical knowledge to the students but to enable them to develop an awareness and understanding regarding the causes and effects of different weather phenomenon and basic forecasting techniques	By the end of this course, students will be able to ▪ Explain the sources of renewable energy sources and their benefits ▪ Demonstrate working principles of energy harvesting from renewable sources of energy

Name of the UG-CBCS Program: B.Sc. (Honours) Electronic Science

Program Outcomes: The B.Sc.(Hons.) Electronic Science program will

- Create basic know how and training to pursue higher study in the field of electronics and related discipline and provide them a dignified way of livelihood.
- Generate skilled manpower for industrial and research organizations in the field of electronics and related areas.
- Enable development of small and large scale entrepreneurship and management projects for startup programs and self employment generation schemes.

Program Specific Outcomes: B.Sc.(Hons.) Electronic Science Passed out Students will be

- Able to design and fabricate electronic systems that can be used for solving real life problems
- Capable of pursuing related professional assignments and confident enough to take up electronics as a career and contribute towards the well being of the society.

Detailed Course Structure CBCS for B.Sc(Honours) Electronic Science:

Semester I

S.No	Paper/Course Code	Name of the Paper/Course	Course Objectives	Course Outcomes
01	ELE-HC-1016	**Core Paper-1:** Basic Circuit Theory & Network Analysis	To make the students able to apply concepts of circuit theory and network theorems in solving engineering problems in DC and AC circuits	By the end of this course, students will be able to ▪ explain basics of electrical circuits and calculate node voltage and branch current of circuits with KVL and KCL ▪ simplify complex network to simpler equivalents by employing network theorems ▪ determine time response of circuits with Classical as well as Laplace transform methods ▪ analyze 2 port networks, transfer functions and frequency

				response of passive filters
02	ELE-HC-1026	**Core Paper-2:** Mathematics Foundation for Electronics	To impart basic mathematical concepts and problem solving skills to the students, which will be very much essential to explain and understand subsequent semester courses of Electronic Science	By the end of this course, students will be able to ▪ Explain the fundamental theories and physical significances of differential equations and special functions & Matrices, Sequences and series and complex variables ▪ Solve problems applied mathematical problems on these topics
03	ELE-HG-1016	***Generic Elective-1:** Network Analysis and Analog Electronics	This course will enable students to learn fundamentals of KCL, KVL, Network theorems and basic semiconductor devices	By the end this course, students will be able to ▪ explain fundamental theory of KCL, KVL, Network theorems and basic semiconductor devices ▪ design and analyze basic electronic circuits and networks ▪ solve basic mathematical problems related to networks and electronic devices

Semester -II

S.No	Paper/Course Code	Name of the Paper/Course	Course Objectives	Course Outcomes
01	ELE-HC-2016	**Core Paper-3:** Semiconductor Devices	To make the students able to understand theory, physics and working of basic electronic devices	By the end of this course, students will be able to ▪ Explain physics of energy band theory and carrier statistics in semiconductors compare to those of conductors and dielectrics ▪ Analyze characteristic of diodes, transistors (BJT, JFET & MOSFET) and power electronic devices ▪ Illustrate mathematical models of semiconductor devices and perform basic experiments
02	ELE-HC-2026	**Core Paper-4:** Applied Physics	To make the students able to understand physics and properties of different materials used in Electronic devices and circuits	By the end of this course, students will be able to ▪ explain theories and significances of basic Quantum Physics and crystal lattice in explaining electrical properties of semiconductors ▪ analyze mechanical, thermal, magnetic and electrical properties of materials used in electronic devices and systems
03	ELE-HG-2016	**Generic Elective-2:** Linear and Digital Integrated Circuits	This course will	By the end of this

			enable students to learn operation of integrated electronic devices and their applications	course, students will be able to ▪ Explain operation and electrical characteristics of basic analog and digital integrated electronic devices. ▪ Design analog and digital circuits with integrated circuits ▪ Solve mathematical problems on analog and digital circuits.

Semester-III

S.No	Paper/Course Code	Name of the Paper/Course	Course Objectives	Course Outcomes
01	ELE-HC-3016	***Core Paper-5*****:** Electronic Circuits	To make the students able to understand applications of different Electronic devices in designing electronic systems	By the end of this course, students will be able to ▪ explain theories and working of active & passive electronic devices ▪ design and analyze circuits for DC power supply, small signal amplifiers, power amplifier and oscillators
02	ELE-HC-3026	**Core Paper-6**: Digital Electronics with VHDL	This course will enable the students to learn fundamentals of number system, digital logic circuits and hardware description language for digital system design	By the end of this course, students will be able to ▪ Explain number system and operation of combinational and sequential logic circuits ▪ Design combinational and

				sequential logic circuits ▪ Write VHDL program for modelling basic logic circuits
03	ELE-HC-3036	***Core Paper-7*****:** C Programming & Data Structure	This course will enable the students to learn basic programming skills of C language and its application in solving science engineering problems	By the end of this course, students will be able to ▪ Explain syntax of C language, data types and various operators etc. ▪ Develop algorithm and flowchart of different problems and write corresponding program in C ▪ Write C programs for data structure related applications
04	ELE-SE-3016	**Skill Enhancement Course-1:** Design and Fabrication of Printed Circuit Boards	This course will enable the students to learn basic skills to design PCB of electronic circuits	By the end of this course, students will be able to ▪ Explain the fundamentals of PCB making process ▪ Design PCB of a given schematic circuits by using students version of proprietary software or open source CAD tools & fabricate PCB by using low cost methods at home
05	ELE-HG-3016	**Generic Elective-3**: Communication System	This course will enable students to understand fundamental of electronic communication process and communication	By the end of this course, students will be able to ▪ Describe functional blocks of electronic communication

			systems	system and sources of noise ▪ Compare and contrast amplitude, frequency and angle modulation systems ▪ Illustrate pulse modulation and digital communication techniques

Semester-IV

S.No	Paper/Course Code	Name of the Paper/Course	Course Objectives	Course Outcomes
01	ELE-HC-4016	**Core Paper-08:** Operational Amplifiers & Applications	This course will make the students able to understand application of operational amplifier and other linear integrated circuits.	By the end of this course, students will be able to ▪ explain and differentiate ideal and real characteristics of operational amplifier ▪ design and analyze signal processing and conditioning circuits with op-amp
02	ELE-HC-4026	**Core Paper-09:** Signals and Systems	This course will make the students able to understand fundamentals of signals and systems needed to take up advanced courses in digital signal processing	By the end of this course, students will be able to ▪ Explain different types of signals ▪ Determine Laplace transform, and Fourier series and transform of different signals ▪ Describe and analyze properties of LTI systems and their responses

03	ELE-HC-4036	**Core Paper-10:** Electronic Instrumentation	This course will enable the students to learn fundamental concepts of test and measuring instrumentation	By the end of this course, students will be able to • explain accuracy, precision, sources of error in measurement • demonstrate the working principle and application of basic test and measuring instruments • describe fundamentals of sensors and transducers
04	ELE-SE-4014	**Skill Enhancement Course-2:** Programming with LabVIEW	This course will introduce the fundamentals of Graphic interface based system design based on LabVIEW software	By the end of this course, students will be able to ▪ Explain the concept of virtual instrumentation ▪ Design LabVIEW based VI for signal processing and data acquisition
05	ELE-HG-4016	***Generic Elective-04:** Microprocessor and Microcontroller	This course will enable students to learn architecture and programming of microprocessors and microcontrollers	By the end of this course, students will be able to • Compare and contrast microprocessor and microcontroller • Develop algorithm and write assembly language program for 8085 and 8051 • Interface basic I/O devices with microprocessor and microcontroller

Semester –V

S.No	Paper/Course Code	Name of the Paper/Course	Course Objectives	Course Outcomes
01	ELE-HC-5016	**Core Paper-11:** Microprocessor & Microcontroller	This course will enable students to learn architecture and programming of microprocessors and microcontrollers	By the end of this course, students will be able to ▪ Compare and contrast microprocessor and microcontroller ▪ Develop algorithm and write assembly language program for 8085 and 8051 ▪ Interface basic I/O devices with microprocessor and microcontroller ▪ Design microcontroller based circuits
02	ELE-HC-5026	**Core Paper-12:** Electromagnetics	This paper will make students able to understand fundamentals of Electromagnetics that will be needed for courses on Applied electromagnetics and microwaves	By the end of this course, students will be able to ▪ Explain different coordinate systems, vector algebra, concept of potentials, flux, divergences ▪ Solve electrostatic and magneto static problems based on Poisson's and Laplace equations ▪ Describe physical significance of Maxwell's equations and applications in plane wave propagation and guidance

03	ELE-HE-5016	**Discipline Specific Elective-1:** Power Electronics	This course will be able to make students understand basic fundamentals of power electronic devices and systems	By the end of this course, students will be able to ▪ Explain characteristics of power electronics devices ▪ Design power converter circuits, choppers etc. ▪ Analyze performance of basic electrical machines related to power electronics
04	ELE-HE-5026	**Discipline Specific Elective-2:** Digital Signal Processing	This course will impart basic concepts and techniques of digital signal processing	By the end of this course, students will be able to ▪ Explain characteristics of discrete time systems ▪ Determine DFT and Z-transform of the transfer function of discrete time system ▪ Design digital filters

Semester –VI

S.No	Paper/Course Code	Name of the Paper/Course	Course Objectives	Course Outcomes
01	ELE-HC-6016	**Core Paper-13:** Communication System	This course will enable students to understand fundamental of electronic communication process and communication systems	By the end of this course, students will be able to ▪ Describe functional blocks of electronic communication system and sources of noise

				▪ Compare and contrast amplitude, frequency and angle modulation systems ▪ Illustrate pulse modulation and digital communication techniques ▪ Design basic circuits for communication system
02	ELE-HC-6026	**Core Paper-14:** Photonics	This paper will make students able to understand the fundamentals of light propagation in different media, interference, diffraction, and principles of other optoelectronic devices and optical communication	By the end of this course, students will be able to ▪ Explain propagation of light wave in different media ▪ Illustrate interference and diffraction of light waves ▪ Demonstrate use of LED, LASER, photodetectors and optical fiber as dielectric wave guide
03	ELE-HE-6016	**Discipline Specific Elective-3:** Control Systems	This will be provide basic fundamentals of closed loop control system and their stability criterion and time domain responses	By the end of this course, students will be able to ▪ Explain difference between open loop and closed loop control systems, signal flow graph and reduction techniques ▪ analyze time domain and frequency domain response of control systems and their stability ▪ Illustrate state variable analysis of

				control system
04	ELE-HE-6026	**Discipline Specific Elective-4:** Dissertation / Project Work	This elective course is meant for students to acquire advanced practical skill / knowledge by doing experimental investigation on a given topic of Electronics with an advisory support from a teacher / faculty member. It involves application of knowledge in solving / analyzing /exploring a real life situation / difficult problem. This paper is meant to be introduction of research component/concept in Under-Graduate Courses.	By the end of this course, students will be able to ▪ demonstrate creativity and critical thinking ability ▪ gain confidence in application of theoretical knowledge to practical aspects ▪ Design circuits, PCB and solder components on the PCB

(i) MATHEMATICS –CBCS COURSE T.D.C (HONOURS)

Semester	Course code	C.O
1 HONOURS	(a) MAT-HC-1016 (Calculus)	1. Students will be able to solve limit, functions, derivatives, integrals and infinite series problems of vector functions. 2. They will be able to apply the scientific method of analysis. 3. They will be able to understand reduction formula to solve integrals.
	(b) MAT-HC-1026 (Algebra)	1. They will have developed analytical skills for practical applications in business, science, health care and other non-technical fields. 2. They will have learned solve linear equations and matrix equations. 3. They will be able to apply the properties of determinates in their calculations.
2 HONOURS	(a) MAT-HC-2016 (Real Analysis)	1. Students will be able to learn about concepts such as sequences and their limits, continuity, differentiation, integration and sequences of functions. 2. They will be able to learn to

		describe the real line as a complete ordered field. 3. They will have knowledge about commonly used tests for convergence of infinite series.
	(b) MAT-HC-2026 (Differential equations)	1. They will able to learn to calculate the movement or flow of electricity, motion of an object and explain thermodynamics concept. 2. They will be able to construct and find solutions of mathematical models in the form of differential equations. 3. They will be able to learn how to determine the growth of population. 4. They will have knowledge about various methods of solving differential equations and make qualitative analysis of the behaviours of solutions along with existence and uniqueness problems.
3 HONOURS	(a) MAT-HC-3016 (a) (Theory of real functions)	1. They will be able to learn to describe the fundamental properties of real numbers.

		2. They can know to map a subset of set of real numbers to the set of real numbers.
	(b) MAT-HC-3026 (Group Theory)	1. They will be able to learn about algebraic objects called groups which are used to model and hence study the symmetries of a certain object. 2. They will be able to understand terms such as homomorphism and isomorphism and the concept of conjugacy.
	(c) MAT-HC-3036 (Analytical geometry)	1. Students will be able to learn the correspondence between geometric curves and algebraic equations. 2. Develops knowledge about geometrical shapes like sphere, cone, cylinder. 3. They will be able to learn to use analytical geometry in physics, engineering, aviation rocket and space science.

(i) MATHEMATICS –CBCS COURSE T.D.C (REGULAR & GENERIC)

Semester	Course code	C.O
1 REGULAR AND GENERIC	MAT-HG-1016 MAT-RC-1016 (Calculus)	1. Students will be able to solve limit, functions, derivatives, integrals and infinite series problems. 2. They will be able to learn the scientific method of analysis. 3. They will be able to understand changes over tiny intervals of time.
2 REGULAR AND GENERIC	MAT-HG-2016 MAT-RC-2016 (Algebra)	1. Students will be able to learn the basic idea of groups and rings. 2. They will be able to learn about matrices and solve system of linear equations by use of matrix. 3. They will be able to know when an algebraic equation has an algebraic solution.
3 REGULAR	MAT-HG-3016 MAT-RC-3016 (Differential calculus)	1. Students will be able to solve linear and exact differential equations. 2. They will be able to find orthogonal and oblique trajectories in Cartesian co-ordinates.

SKILL ENHANCEMENT COURSE.

SEMESTER	COURSE CODE	C.O
3	MAT-SE-3114 MAT-HG-3116 MAT-SE-3014	1. Students will understand the basic foundations of mathematics. 2. They will be able to compute various mathematical problems using software like mathematical, mat lab etc. 3. They will have enhanced problem solving skills. 4. They will be able to code a mathematical problem into a software programme using the computer.

T.D.C MATHEMATICS –CBCS COURSE

PSO

One completion of the course the students will be able to

1. Communicate mathematics effectively by oral, written, computational and graphic means.
2. Create mathematical ideas from basic axioms.
3. Gauge the hypothesis, theories techniques and proofs provisionally.
4. Utilize mathematics to solve theoretical and applied problems by critical understanding analysis an d synthesis.
5. Identify applications of mathematics in other disciple leading to enhancement of career prospects in various fields.

DEPARTMENT OF PHYSICS

COURSE OUTCOME

1st Semester:

Course outcome: Upon completion of this course, students are expected to understand the role of vectors and coordinate systems in Physics, solve Ordinary Differential Equations, laws of motion and their application to various dynamical situations, Inertial reference frames their transformations, concept of conservation of energy, momentum, angular momentum and apply them to basic problems, phenomenon of simple harmonic motion, motion under central force, concept of time dilation, Length contraction using special theory of relativity. In the laboratory course, after acquiring knowledge of how to handle measuring instruments (like screw gauge, Vernier calipers, travelling microscope) student shall embark on verifying various principles and associated measurable parameters.

2nd Semester:

Course outcome: Upon completion of this course, students are expected to apply Gauss's law of electrostatics to solve a variety of problems, calculate the magnetic forces that act on moving charges and the magnetic fields due to currents, have brief idea of magnetic materials, understand the concepts of induction, and apply them to solve variety of problems. In the Lab course, students will be able to measure resistance (high and low), Voltage, Current, self and mutual inductance, capacitor, strength of magnetic field and its variation, study different circuits RC, LCR etc.

3rd Semester:

Course outcome: Upon completion of this course, students are expected learn the basic concepts of thermodynamics, the first and the second law of thermodynamics, the concept of entropy and the associated theorems, the thermodynamic potentials and their physical interpretations, Maxwell's thermodynamic relations, fundamentals of the kinetic theory of gases, Maxwell-Boltzman distribution law, equipartition of energies, mean free path of molecular collisions, viscosity, thermal conductivity, diffusion and Brownian motion, black body radiations, Stefan- Boltzmann's law, Rayleigh-Jean's law and Planck's law and their significances, quantum statistical distributions, viz., the Bose-Einstein statistics and the Fermi-Dirac statistics. In the laboratory course, the students will be able to Measure of Planck's constant using black body radiation, determine Stefan's Constant, coefficient of thermal conductivity of a bad conductor and a good conductor, determine the temperature coefficient of resistance, study variation of thermo emf across two junctions of a thermocouple with temperature etc.

4th Semester:

Course outcome: Upon completion of this course, students are expected to understand Simple harmonic oscillation and superposition principle, importance of classical wave equation in transverse and longitudinal waves and solving a range of physical systems on its basis, concept of normal modes in transverse and longitudinal waves: their frequencies and configurations, interference as superposition of waves from coherent sources derived from same parent source, Demonstrate understanding of Interference and diffraction experiments, Polarization. In the laboratory course, student will gain hands-on experience of using various optical instruments and making finer measurements of wavelength of light using Newton Rings experiment, Fresnel Biprism etc. Resolving power of optical equipment, the motion of coupled oscillators, study of Lissajous figures and behavior of transverse, longitudinal Waves.

5th Semester:

Course Outcome: Upon completion of this course, students will be able to describe the errors in measurement and statistical analysis of data required while performing an experiment. Also, students will learn the working principle, efficiency and applications of transducers & industrial instruments like digital multimeter, RTD, Thermistor, Thermocouples and Semiconductor type temperature sensors.

6th Semester:

Course Outcome: Upon completion of this course, students will have the concepts of electronics in communication, details of communication techniques based on Analog Modulation, Analog and digital Pulse Modulation including PAM, PWM, PPM, ASK, PSK, FSK, overview of communication and Navigation systems such as GPS and mobile telephony system.

Department of Physics

Program Specific Outcome (PSO)

1. Students will understand the core concept of physics subjects through theory and practical.
2. Students will be able to develop an understanding of the impact of physics and Science on society.
3. Students will learn to develop the idea on different experimental techniques used in physics.

STATISTICS

COURSE OUTCOME

(MAJOR)

PAPER: STA-HC-1016

1. Students will be acquintant with some basic concepts of Statistics.
2. Enable to analyse data using measures of Central tendency, Dispersion, method of moments and to interpret them
3. Able to fit bivariate data by the principle of least squares and orthogonal polynomials.
4. Understand the concept of correlation co efficient, correlation ratio, intra -class correlation, partial and multiple correlation and regression.
5. To learn about different types of Index Numbers.

PAPER: STA-HC-1026

1. Learn the basic concept of differential calculus.
2. Understand the terms Definite integrals, Double integral, Beta And Gamma functions.
3. Have an idea of Exact differential equations and Higher order differential equations.
4. Able to know formation and solution of Partial differential equations.
5. PAPER: STA-HC-1026

PAPER: STA-HC-2016

1. Understand the basic concept of probability and its applications.
2. Acquintant with the concept of expectation, variance, co variance and their properties.
3. Able to find joint, marginal and conditional probability functions.
4. Made familiar with Probability Generating Function, Characteristic Functions and their functions.
5. Learn the concept of some standard probability distributions.

PAPER: STA-HC-2026

1. Learn different aspects of theory of equations.
2. Understand the algebra of matrices.
3. Able to find determinant of a matrix and its use in solution of linear equations.
4. Able to find rank, characteristics roots and vectors of a matrix.

PAPER: STA-HC-3016

1. Acquintant with the idea of order statistics and its distribution.
2. Understand the basic idea of sampling distribution of statistics and tests related to it.
3. Would have a good idea of exact sampling distribution and its test of significance.

4. Understand the application of different sampling distribution and the relationship between them.

PAPER: STA-HC-3026

1. Acquire the concept of basic terms of sampling.
2. Understand the probability and non-probability sampling techniques.
3. Know the different estimation procedures, bias in estimates and standard error of estimates.
4. Understand the technique of optimum design, proportional and optimum allocation in stratified random sampling.
5. Acquintant with different official statistics of India and the role of organizations like MOSPI, CSO, NSSO etc.

PAPER: STA-HC-3036

1. Understand real analysis and different terms related to it.
2. Able to understand the infinite series and different comparison tests.
3. Able to find out limit, continuity and differentiability of functions of several variables.
4. Acquintant with different terms and theorems of numerical analysis.

PAPER: STA-HC-4016

1. Acquintant with the properties of good estimators and minimum variance unbiased estimator.
2. Know the methods of maximum likelihood, moments, minimum chi-square and their properties.
3. Will have the knowledge of tests of significance.
4. Have basic idea of sequential probability ratio test.

PAPER: STA-HC-4026

1. Understand the theory of linear estimation and concept of Gauss Markov Theorem.
2. Learn about Regression analysis with hypothesis testing.
3. Equipped with the knowledge of analysis of variance and co-variance for fixed effect models.
4. Have the concept of prediction from a fitted model and their remedies by transformation.

PAPER: STA-HC-4036

1. Know the concept of statistical quality control, control chart, and rational sub-grouping.
2. Understand the technique of preparing control chart for variables and attributes.
3. Acquire the knowledge of acceptance sampling plan with graphical interpretations.
4. Have the concept of 6-sigma.

PAPER: STA-HC-5016

1. Know about generating function and introduction to stochastic process.
2. Have the concept of Markov chain and classification of states and chains.
3. Acquire the knowledge of Poisson process and its properties.
4. Understand the concept of queuing model m/m/1 with finite and infinite system capacity

PAPER: STA-HC-5026

1. Understand the history and importance of C- programming .
2. Know the basic data types , symbolic constants, overflow and underflow of data.
3. Have the concept of arithmetic , relational, logical expressions.
4. Acquire the knowledge of decision making and branching using different loops.
5. Know the concept of arrays and strings.

PAPER: STA-HC-6016

1. Understand the basic principle of design of experiments and basic terms.
2. Have the concept of CRD, RBD, LSD—layout, model and statistical analysis.
3. Know the technique of split plot design, strip plot design and introduction to BIBD.
4. Have the knowledge of factorial experiments and their advantages.

PAPER: STA-HC-6026

1. Have the knowledge of bi-variate and multivariate distributions.
2. Understand the technique of multivariate normal distribution and their properties.
3. Will understand the basic idea of Hotellig t-square and its applications.
4. Acquire the knowledge of different non-parametric test.

PAPER: STA- HE- 5016

1. Have knowledge about different phases of Operations Research, model building, different types of operation research problems.

2. Acquire knowledge about mathematical formulation of Linear Programming Problem (L.P.P), solve L.P.P. through different methods.

3. Know to solve the Transportation Problems.

4. Have knowledge about Game Theory.
5. Acquire knowledge about Inventory Management like EOQ model with its variations, ABC analysis.

PAPER: STA- HE- 5026

1. Have knowledge about Time series data, its components, applications in real life data.
2. Able to determine the Trend values using different methods.
3. Know to determine and eliminate Seasonal variations presents in a data set using different methods.
4. Acquire the knowledge to forecast and smooth a Time series data.

PAPER: STA-HE- 6024

1. Have the knowledge of Population composition, dependency ratio etc.
2. Acquire the knowledge of different mortality measurements like Crude death rate(CDR), Specific death rate(SDR), Standardized death rate (STDR), Infant mortality rate (IMR).
3. Able to develop Life tables, have knowledge of stationary and stable population, central mortality rates and force of mortality etc.
4. Have the knowledge of different fertility measurements like Crude birth rate (CBR), General fertility rate(GFR), Total fertility rate(TFR), Gross reproduction rate (GRR), Net reproduction rate(NRR).

PAPER: STA- HE- 6046

1. Have knowledge to identify a real life problem for project.
2. Able to collect data from real life situation, propel them to dwell on some theory.
3. Acquire the knowledge to Present and analyse the data from various angle.
4. Have the knowledge to prepare a statistical report.

STATISTICS

COURSE OUTCOME

(General)

PAPER: STA-HG/RC-1016

1. Have the knowledge of collection and presentation of data both tabular and graphical form.
2. Know the different measures of central tendency and dispersions.
3. To have the knowledge about finite difference.
4. Have the knowledge of correlation and regression.
5. To have the knowledge of consistency, independence and association of data.

PAPER: STA-HG/RC-2016

1. Learn the concept of probability and related terms.
2. Understand different types of random variables and their expectations, variance, moment generating functions.
3. Have the knowledge of convergence in probability and central limit theorem.
4. Acquire the knowledge of discrete and continuous standard distributions.

PAPER: STA-HG/RC-3016

1. Know the concept of testing of hypothesis and non-parametric tests.
2. Understand the concept of categorical data analysis, tests of association and goodness of fit.
3. Have the concept of analysis of variance and basic terms of design of experiments.
4. Learn the technique of analysis of CRD and RBD.

PAPER: STA-HG/RC-4016

1. Learn the concept of time series, different components and their measurements.
2. Understand the concept of index number, different types and their constructions.
3. Acquire the knowledge of statistical quality control, control charts for variables and attributes.

4. Have the knowledge of measurement of population, fertility, and reproduction and population growth.
5. Know the concept of demand analysis and the technique of determination of elasticity if demand.

PAPER: STA-RE-5016

1. Know the concept of operation research, LPP, graphical and simplex method of solving LPP.
2. Understand the techniques of solving transportation problem using different methods.
3. Have the idea of game theory and basic terms.
4. Acquire the knowledge inventory management, EOQ model and related terms.

PAPER: STA-RE-6016

1. Have the concept of Econometric models for two or more variable.
2. Know the least square assumptions and estimation of regression parameters.
3. Have an idea of multiple regression analysis, estimation and inference.
4. Understand the concept of multi co linearity and autocorrelation.

PAPER: STA— SE— 3014

1. Acquire knowledge about graphical presentation of a data set through software packages like Excel, SPSS.

2. Learn to generate automated reports giving detailed descriptive statistics.

3. Able to generate random numbers using software packages.

4. Learn to fit polynomials of different degrees , exponential curves etc.

5. Able to carry out statistical analysis of projects, import data, code editing, can compute p- values and confidence intervals.

PAPER : STA— SE— 4024

1. Learn to identify the research problems, its necessity and significance.

2. Have knowledge about different survey methodologies, target populations, sampling frames etc.

3. Acquire knowledge about data analysis and its interpretation, precautions to be taken in interpretation of analysis of data.

4. Able to develop a questionnaire and collect survey data relating to a research problem.

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STATISTICS

PROGRAM SPECIFIC OUTCOME

PSO for Honours:

1. As this program is a combination of detailed course of Statistics and a good amount of mathematics and operation research , the scope of higher studies is ample.
2. Students will be equipped with skill enhancement courses like R- programming, SPSS, C Programming etc.
3. Students will be well prepared for services like Indian Statistical/Economic Services, CSO, NSSO, ICMR, Banks and Insurance sector.

PSO for Honours Generic/ Regular Course:

1. This program enhances theoretical rigor with technical skills which prepare students to become globally competitive to enter into a promising professional life even after graduation .
2. Students will be equipped with skill enhancement courses like R- programming, SPSS, Excel etc
3. Students with Honours in Computer Science, Mathematics etc can apply their statistical knowledge in analyzing Big data.

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