

NALBARI COLLEGE, NALBARI



Course Outcomes (COs)

Nalbari College is affiliated to Gauhati University, Guwahati and follows the curricula prescribed by the University. The college has, hereby, stated in details the Course Outcomes of all courses.

1. a) BA (Honours) Assamese

SL. NO.	SEMESTER	PAPER CODE & TITLE	COURSE OUTCOMES	UNIT/ CHAPTER	BLOOM'S TAXONOMY LEVEL
1	1 st	ASM-HC-1016 History of Assamese Literature from (Charyapada to Sankara Era)	<ul style="list-style-type: none"> • Conceptual ideas on the development of Assamese literature. • Knowledge on the major writers of the concerned period. • Knowledge on the major literary works of the concerned period. 	Unit 1: The Division of the Era's of Assamese Literature.	Remember, Knowledge, Understand
				Unit 2: Literature of the emerging period.	Remember, Knowledge, Understand,
				Unit 3: Pre-Sankaradeva Period	Remember, Knowledge, Understand
				Unit 4: Sankaradeva Period	Remember, Knowledge, Understand, Cognitive.
2	1 st	ASM-HC-1026 History of Assamese Literature from Post-Sankari to Arunodai Era)	<ul style="list-style-type: none"> • Conceptual ideas on the development of Assamese literature. • Knowledge on the major writers of the concerned period. • Knowledge on the major literary works of the concerned period. 	Unit 1: Post-Sankaradeva Period (17 th – 18 th Century)	Remember, Knowledge, Understand
				Unit 2 : Literature of Post-Sankaradeva Period	Knowledge, Understand, Cognitive.
				Unit 3: Pre-Arunodoi and Arunodoi Period	Knowledge, Understand

				Unit 4: Literature of Pre-Arunodoi and Arunodoi Period	Knowledge, Understand, Cognitive
3	2 nd	ASM-HC-2016 Introduction to Linguistics	<ul style="list-style-type: none"> • Primary Knowledge on Phonetics, Morphology and Syntax. • Knowledge on Linguistic, Grammar and their various divisions and trends. 	Unit 1: General Introduction of Linguistics.	Remember, Knowledge, Understand, Evaluate.
				Unit 2: Branches of Linguistics	Remember, Knowledge, Understand, Evaluate.
				Unit 3: Stages of Study in Linguistics	Remember, Knowledge, Understand, Cognitive
				Unit 4: The History of Linguistic Study.	Knowledge, Understand, Cognitive
4	2 nd	ASM-HC-2026 Literary Criticism	<ul style="list-style-type: none"> • Introduction to Basic Concepts of • Literary Criticism, Genre, Western and Indian Criticism etc. 	Unit 1: Rasa, Dhvani, Guna, Riti: Definition and Nature	Knowledge, Understand, Cognitive
				Unit 2: The Place of Imagination in Poetry, Pictorialism, Symbolism	Analyse, Understand, Apply
				Unit 3 : Tragedy, Absurd, Brechtian Theatre.	Knowledge, Understand, Cognitive

				Unit 4: Forms of Short Stories and Novels	Knowledge, Understand, Analyse
5	3 rd	ASM-HC-3016 Entrance to Assamese Literature	<ul style="list-style-type: none"> Development of literary taste through intense study of selected literary texts. 	Unit 1 : Tales, Poems and stories	Analyse, Understand
				Unit 2 : Articles and Criticism	Knowledge, Understand, Analyse
				Unit 3 : Autobiographies, Biographies and Novels	Knowledge, Understand, Analyse
				Unit 4: Travel Literatures and Personal Eassays	Knowledge, Understand, Analyse
6	3 rd	ASM-HC-3026 Specimens of Assamese Poetry	<ul style="list-style-type: none"> Introduction to history of Assamese Poetry. Knowledge on methodology of critical analysis and evaluation of poetry. Development of refined taste for poetry. 	Unit 1 : Chitrakutar Chitra, Maya Ayodhyar Sristri Aru Chitrawali Chaturdashir Khela	Knowledge, Understand, Analyse
				Unit 2: Sarat Barnana, Draupadir Bilap	Knowledge, Understand, Analyse
				Unit 3: Prakriti, Antim Jyoti, Manorama	Knowledge, Understand, Analyse

				Unit 4: Palas, Aji akou Mejangkarir Angasola Pindhi, Brahmaputrat Suryasta	Knowledge, Understand, Analyse
7	3 rd	ASM-HC-3036 Culture of Assam	<ul style="list-style-type: none"> • Knowledge on multi-ethnic, composite culture of Assam, and its modernization. • Understanding on Assamese culture. 	Unit 1 : Definitions and forms of Culture	Understand. Evaluate, Cognitive
				Unit 2: Social Folklore, Religious Traditions and Festivals	Understand. Evaluate, Cognitive, Analyse
				Unit 3: Assamese Performing-Arts	Knowledge, Understand. Evaluate, Cognitive, Analyse
				Unit 4: Architecture, Sculpture and Painting of Assam	Understand. Evaluate, Cognitive, Analyse
8	4 th	ASM-HC-4016 Comparative Indian Literature	<ul style="list-style-type: none"> • Comparative perspectives on Literature. • Conception of Indian and World Literature. • Study of selected texts of 	Unit 1 : Introduction to Comparative Literature	Knowledge, Understand, Analyse
				Unit 2: Introduction to Comparative Indian Literature	Knowledge, Understand, Analyse

			multilingual Indian literature.	Unit 3: Short story: Abhagir Swarga, Waapsi, Gandhi	Knowledge, Understand, Evaluate, Cognitive, Analyse
				Unit 4: Novel: Nirmla, Pather Panchali	Knowledge, Understand, Evaluate, Cognitive, Analyse
9	4 th	ASM-HC-4026 Assimilation in Assamese: Aryan and Non-Aryan Languages	<ul style="list-style-type: none"> • Concept of Language Family- Indo- European,Sino-Tibetan and Austric. • Conceptualising Assamese as an Aryan Language with elements of Non-Aryan Languages. 	Unit 1: The Emerging Assamese Language	Knowledge, Understand
				Unit 2: The Relationship between the Indo-Aryan Languages and the Assamese Language	Understand, Analyse
				Unit 3: The Relationship Between the Assamese Language and non-Aryan Language	Knowledge, Understand, Analyse
				Unit 4: Aryan and non-Aryan language elements in the Contemporary Assamese Language	Knowledge, Understand. Evaluate, Cognitive, Analyse

10	4 th	ASM-HC-4036 Assamese Prose Literature	<ul style="list-style-type: none"> • Knowledge online age of Assamese • Knowledge on various Prose styles in Assamese. 	Unit 1: Sankaradeva's Rukmini Haran's Rukminir Prempatra, Nanda Yasodar Kalah, Bayukarati Mantra	Knowledge, Understand, Analyse
				Unit 2: Arjunar Bisad Yug, Guru Sewa Mahatmya, Ramar Ban Gaman	Knowledge, Understand, Cognitive, Analyse
				Unit 3: Guru Sishyar Manikanchan Sangyog, Assamar Ranodyam	Knowledge, Understand, Analyse
				Unit 4: Hastividyarnab. Samdhara Garar Ranjayar Foli, Badan Chandra Barphukanaloi Chadrakanta Singha Swargadeur Guponiya Patra.	Knowledge, Understand, Analyse
11	5 th	ASM-HC-5016 Assamese Drama and their Production	<ul style="list-style-type: none"> • Concept of drama-plot, character, dialogue, dramatic conflict etc. • Concepts on Ankiya, Historical, realistic, Absurd 	Unit 1: A brief History of Assamese Drama	Knowledge, Understand, Analyse
				Unit 2: Ankiya Naat and Performance	Knowledge, Understand, Analyse, Cognitive

			<p>drama.</p> <ul style="list-style-type: none"> • Stage art and craft. 	<p>Unit 3: Assamese Drama and Performance of Pre-Independence Era, Nilambar</p>	<p>Knowledge, Understand, Analyse</p>
				<p>Unit 4: Assamese Drama of Post-Independence Era. Ahar, Urukha</p>	<p>Knowledge, Understand, Analyse</p>
12	5 th	<p>ASM-HC-5026 Assamese Grammar</p>	<ul style="list-style-type: none"> • Knowledge on Assamese Phonology, Morphology and Syntax. 	<p>Unit 1 : History of Assamese Grammar, The classification of Grammar, Elements of Grammar</p>	<p>Knowledge, Understand, Analyse</p>
				<p>Unit 2: Phonology of Assamese Language.</p>	<p>Knowledge, Understand, Analyse</p>
				<p>Unit 3: Morphology of Assamese Language</p>	<p>Knowledge, Understand, Analyse</p>
				<p>Unit 4: Syntax of Assamese Language</p>	<p>Knowledge, Understand, Analyse</p>
13	5 th	<p>ASM-HE- 5026 Assamese Romantic</p>	<ul style="list-style-type: none"> • Conceptualising Romanticism and it's impact on Assamese poetry, 	<p>Unit 1: Bhrum, Niyar, Aatman, Priyatamar Sithi</p>	<p>Remember, Understand, Analyse</p>

		Poetry	major Romantic poets and poems in Assamese.	Unit 2: Keteki (Pratham Taranga), Manabayatan, Biswaharan, Sonowali Desh	Remember, Understand, Analyse
				Unit 3: Bidayparat, Parashmani, Biswashilpi.	Remember, Understand, Analyse
				Unit 4: Saapmukta, He Janani Bharatbarsha, Laalkilla	Remember, Understand, Analyse
14	5 th	ASM-HE- 5036 Sankardeva	<ul style="list-style-type: none"> Reading Sankardeva as an author, his merits and demerits, his philosophy, his contributions to Assamese literature. 	Unit 1 : Sankaradeva's Literature and Background	Understand, Analyse, Evaluate
				Unit 2: Bargeet: Narayan Kahe Bhakati, Sarangapani he, Kirtan Ghosa	Knowledge, Understand, Analyse
				Unit 3: Harichandra Upakhyan	Knowledge, Understand, Analyse
				Unit 4: Parijaat Haran Naat	Knowledge, Understand, Analyse
15	6 th	ASM-HC-6016 Assamese Short-story	<ul style="list-style-type: none"> Introduction with Assamese Short-story and Novel-their Trends, Styles, 	Unit 1: Trends of Assamese Short-Story	Understanding, Analyse

		and Novel	importance etc.	Unit 2: Trends of Assamese Novel	Knowledge, Understand, Analyse
				Unit 3: Short Story: Nina, Bardeuta, Rajniti Nubuja Manuh	Knowledge, Understand, Analyse
				Unit 4: Datal Haatir Uye Khua Hauda	Knowledge, Understand
16	6 th	ASM-HC-6026 History of Assamese Script	<ul style="list-style-type: none"> • Knowledge on development of Assamese script through ages in Indian context. • Introduction with prescribed samples of Assamese script. 	Unit 1: Introduction to Script	Knowledge, Understand
				Unit 2: Inscriptions of Assam	Knowledge, Understand, Evaluate, Cognitive
				Unit 3: Copperplates of Assam	Knowledge, Understand, Evaluate, Cognitive
				Unit 4: Assamese Handwritten Books	Knowledge, Understand, Evaluate, Cognitive
17	6 th	ASM-HE- 6016 Lakshminath Bezbaroa	<ul style="list-style-type: none"> • Knowledge on Lakshminath Bezbaroa's contribution to Assamese literature. 	Unit 1: Poem	Knowledge, Understand
				Unit 2: Surabhi	Knowledge, Understand

			<ul style="list-style-type: none"> • Study of prescribed texts. 	Unit 3: Autobiography	Knowledge, Understand, Evaluate, Cognitive
				Unit 4: Tatwakatha	Knowledge, Understand, Cognitive
18	6 th	ASM-HE-6056 Project	<ul style="list-style-type: none"> • Knowledge about various field of Assamese literature & Culture • Able to know about research & research methodology 	Prakalpa, Under the supervision of the teacher, projects should be prepared on any subject of Important places, festivals, folk-customs, folk performing arts, folk literature, folk language etc.	Apply, Anayse, Evaluate, Knowledge, Cognitive

1. b) BA (Regular, Generic) Assamese

19	1 st	ASM-HG-1016 ASM-RC- 1016 History of Assamese Language	Introduction with the emergence of Assamese literature with special reference to certain texts.	Unit 1: Origine and Development of Assamese Language.	Knowledge, Understand
				Unit 2: Linguistic Characteristics of Ancient Assamese Language	Apply, Anayse, Knowledge, Understand

				Unit 3: Linguistic Characteristics of Medieval Assamese Language	Apply, Anayse, Knowledge, Understand
				Unit 4: Linguistic Characteristics of Modern Assamese Language	Apply, Anayse, Knowledge, Understand
20	1 st	ASM-AE-1014 Communicative Assamese	<ul style="list-style-type: none"> Ability to write formal letters, quotation, social media posts in Assamese 	Unit 1: Communication Skill	Knowledge, Understand
				Unit 2: Assamese Language in working place	Apply ,Anayse, Knowledge, Understand
				Unit 3: Social Media and Assamese Language	Apply, Anayse, Knowledge, Understandi
				Unit 4: Computer and Assamese Language	Apply, Anayse, Knowledge, Understand
21	2 nd	ASM-HG-2016 ASM-RC-2016 History of Assamese Literature	<ul style="list-style-type: none"> Concept of History of Assamese Literature Knowledge on the major literary works of the concerned period. 	Unit 1: Folk-Literature	Knowledge, Understand, Anayse
				Unit 2: Assamese Language in working place	Apply ,Anayse, Knowledge, Understand

				Unit 3: Social Media and Assamese Language	Apply, Anayse, Knowledge, Understand
				Unit 4: Computer and Assamese Language	Apply, Anayse, Knowledge, Understand
22	3 rd	ASM-HG-3016 ASM-RC- 3016 Assamese Plays and Stage Art	<ul style="list-style-type: none"> • Concept of drama-plot, character, dialogue, dramatic conflict etc. • Concepts on Ankiya, historical, realistic, absurd drama. • Stage art and craft • Assamese Drama and their Production 	Unit 1: Traditional Assamese Stage and Dramatic Style.	Knowledge, Understand, Analyse
				Unit 2: History of Proscenium stage of Assam	Apply, Anayse, Knowledge, Understand
				Unit 3: Modern Assamese Drama and Performance	Apply, Anayse, Knowledge, Understand
				Unit 4: Alternate stage of Assam and Performance	Apply, Anayse, Knowledge, Understand
23	3 rd	ASM-SE-3014 Functional Assamese	<ul style="list-style-type: none"> • Skill in application of Assamese in practical and professional lives- Use of Assamese in Advertising, anchoring, public speech, debating, script writing etc. 	Unit 1: Proof Reading : System & Skill	Understand, Apply, Cognitive
				Unit 2: Advertisement of Print & Electronic Media.	Understand, Apply, Cognitive
				Unit 3: Translation : News, Article & Interview	Understand, Apply, Cognitive

				Unit 4: Screenplay (Script) Writing	Understand, Apply, Cognitive
24	3 rd	ASM-CC-3016 Ancient Assamese Literature	<ul style="list-style-type: none"> Knowledge on prescribed Assamese texts in historical perspectives. 	Unit 1: Songs: Jay Jay Jadav, A Ki Befula	Knowledge, Understand, Apply, Cognitive
				Unit 2: Kabya: Brabrubahanar Yudda, Kumar Haran	Knowledge, Understand, Apply, Cognitive
				Unit 3: Arjun Bhanjan	Knowledge, Understand, Apply, Cognitive
				Unit 4: Arjunar Sankhyayog, Ramar Ban Gaman	Knowledge, Understand, Apply, Cognitive
25	4 th	ASM-SE-4014 Creative Literature	<ul style="list-style-type: none"> Story and Poetry writing in practice. 	Unit 1: Definition and Scope of Imagination	Apply, Cognitive, Knowledge
				Unit 2: Definition and Characteristic of Modern Assamese Poetry	Apply, Cognitive, Knowledge
				Unit 3: Plot Selection for Short Story	Knowledge, Understand, Analyse

				Unit 4: Model Preparation of Poetry and Short story	Understand, Analyse, Apply,
26	4 th	ASM-HG-4016 ASM-RC-4016 Modern Assamese Lyrics	<ul style="list-style-type: none"> Acquaintance with Assamese music and its lyrical beauty. 	Unit 1: History of Assamese Modern Song	Knowledge, Understand, Analyse
				Unit 2: Hera Amar Janmabhumi, Mor Gaanat Jwole, Pujo Aha Aai Matri, O Asamiya Dekha Dal.	Knowledge, Understand, Analyse, Apply
				Unit 3: Niyarar Phool, He Dola, Hayera Jetuki, Kaauri Pore	Knowledge, Understand, Analyse, Apply
				Unit 4: Bahudin Bakular Gondh, Sandhiyar Aakashat, Maah-Haladhire, Tomar Babei	Knowledge, Understand, Analyse, Apply
27	4 th	ASM-CC- 4016 Modern Assamese Literature	<ul style="list-style-type: none"> Conceptualization of Modernity and Knowledge on prescribed Assamese texts in historical perspectives. 	Unit 1: Sobhajatrat Nihatjanar Kabita, Marmantik, Pothar	Understand, Analyse, Cognitive
				Unit 2: Bina Kutir, Banaprastha, Deupaharar Bhagnastupat	Understand, Analyse, Cognitive

				Unit 3: Maniram Dewanar Fanchi, Banghosha-Banariya geet	Knowledge, Understand, Analyse
				Unit 4: Labhita	Knowledge, Understand, Analyse
28	5 th	ASM-SE-5014 Recitation	<ul style="list-style-type: none"> Skill on Recitation-theory and practice. 	Unit 1:History of Recitation	Apply, Analyse
				Unit 2: Preparation of Recitation	Apply, Knowledge
				Unit 3: Skill of Recitation	Cognitive, Apply
				Unit 4: Practical Examination	Apply, Knowledge, Understand
29	5 th	ASM-RE-5016 Sankardeva	<ul style="list-style-type: none"> Study of prescribed texts by Sankardeva in details, and knowledge on Sankardeva's contribution to Assamese. 	Unit 1: Introduction of Sankardeva's Literature	Knowledge, Understand
				Unit 2: Narayan Kahe Bhakati Sarangapani he, Kirtan Ghosa	Knowledge, Understand, Analyse
				Unit 3: Harishandra Upakhyan	Knowledge, Understand

				Unit 4: Parijat haran Nat	Knowledge, Understand, Analyse
30	5 th	ASM-RG-5016 Sankardeva	<ul style="list-style-type: none"> Study of prescribed texts by Sankardeva in details and knowledge on Sankardeva's contribution to Assamese. 	Unit 1: Introduction of Sankardeva's Literature	Knowledge, Understand
				Unit 2: Narayan Kahe Bhakati Sarangapani he, Kirtan Ghosa	Knowledge, Understand, Analyse
				Unit 3: Harishandra Upakhyan	Knowledge, Understand
				Unit 4: Parijat haran Nat	Knowledge, Understand, Analyse
31	6 th	ASM-SE-6014 Assamese Spelling	<ul style="list-style-type: none"> Knowledge and Skill on Assamese spelling. 	Unit 1: Cause of Spelling Mistake	Knowledge, Apply
				Unit 2: Spelling Mistake in Consonants	Knowledge, Understand, Analyse
				Unit 3: Errors in deeds	Apply, Understand
				Unit 4: System of Transliteration and	Knowledge, Understand, Analyse, Apply

				Application	
32	6 th	ASM-RE-6016 Metre and Rhetoric	<ul style="list-style-type: none"> Acquaintance with basic principles and divisions of Assamese metre rhetoric 	Unit 1: Akshar, Matra, Lay, Jati, Charan, Muktak	Knowledge, Understand, Analyse
				Unit 2: Pada, Dulari, Sabi, Lesari, Ekawali, Jhumuri	Knowledge, Understand, Analyse
				Unit 3: Definition of Alankara	Knowledge, Understand, Analyse
				Unit 4: Anupras, Yamak, Slesh, Bakrokti, Punoruktiwadabhas, Upama	Knowledge, Understand, Analyse
33	6 th	ASM-RG-6016 Metre and Rhetoric	<ul style="list-style-type: none"> Acquaintance with basic principles and divisions of Assamese metre and rhetoric 	Unit 1: Process of Translation	Knowledge, Understand, Analyse
				Unit 2: Transcreation in same Genre of Literature	Knowledge, Understand, Analyse
				Unit 3: Novel of Lakshminandan Borah to the film of Padum Baruah's Ganga Silonir Pakhi	Knowledge, Understand, Analyse

				Unit 4: Project Writing	Knowledge, Understand, Analyse
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2.a) BA (Honours) English

SL. NO.	SEMESTER	PAPER CODE & TITLE	COURSE OUTCOMES	UNIT/ CHAPTER	BLOOM'S TAXONOMY LEVEL
1	1 st	ENG-HC-1016 English Literary and Cultural History	After completion of the course, learners will: <ul style="list-style-type: none"> • Acquire knowledge about the classical literature of India by reading and understanding texts in English translation. • Familiarise themselves with diverse classical genres like drama and epic. • Understand the diversity of the category "Literature". 	Kalidasa: Abhijnana Shakuntalam	Remember, Understand, Analyse
				Vyasa: "The Dicing", "The Sequel to Dicing", "The Book of the Assembly Hall", "The Temptation of Karna", "The Book of Effort" in The Mahabharata	Remember, Understand, Analyse
				Sudraka: Mrcchakatika	Remember, Understand, Analyse
				Ilango Adigal: "The Book of Banchi" in Cilappatikaram	Remember, Understand, Analyse
2	1 st	ENG-HC-1026 British Poetry	After completion of the course, learners will: <ul style="list-style-type: none"> • Become familiar with classical European texts across genres like drama, epic and poetry. 	Homer: The Odyssey	Remember, Understand, Analyse
				Sophocles: Oedipus the King	Remember, Understand, Analyse

			<ul style="list-style-type: none"> • Obtain an overview of the beginnings of European/English literature. • Acquire tools and methods to carry out literary analyses of texts. • Acquire knowledge of human character and develop moral values. • Form the foundation of studying literature as a mode 	Plautus: The Pot of Gold	Remember, Understand, Analyse
				Ovid: Selections from Metamorphoses; Horace: Satires I:4 in Horace: Satires and Epistles and Persius: Satire	Remember, Understand, Analyse
3	2 nd	ENG-HC-2016 Indian Writing in English	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> • Become acquainted with the category of Indian Writing in English and its place vis-à-vis British/English as well as global literatures. • Read and understand a variety of Indian texts in English across genres and from different time periods. • Be able to analyse issues of language, gender, nationalism and modernity in the Indian colonial and postcolonial 	H.L.V. Derozio: "Freedom to the Slave", "The Orphan Girl"	Remember, Understand, Analyse
				Kamala Das: "Introduction", "My Grandmother's House"	Remember, Understand, Analyse
				Nissim Ezekiel: "Enterprise", "Night of the Scorpion", "Very Indian Poem in English"	Remember, Understand, Apply, Analyse
				Robin S. Ngangom: "The Strange Affair of Robin S. Ngangom", "A Poem	Remember, Understand, Apply, Analyse

			contexts.	for Mother"	
				Mulk Raj Anand: "The Two Lady Rams"	Remember, Understand, Analyse
				R.K. Narayan: Swami and Friends Salman Rushdie: "The Free Radio"	Remember, Understand, Analyse
				Anita Desai: In Custody	Remember, Understand, Analyse
				Shashi Deshpande: "The Intrusion"	Remember, Understand, Analyse
				Manjula Padmanabhan: Lights Out	Remember, Understand, Analyse
				Mahesh Dattani: Tara	Remember, Understand, Analyse, Evaluate
4	2 nd	ENG-HC-2026 British Poetry and Drama: 14 th to 17 th Centuries	After completion of the course, learners will: <ul style="list-style-type: none"> Understand the beginnings of modern British literature. Develop an awareness of the interconnections between the 	Geoffrey Chaucer: The Wife of Bath's Prologue	Remember, Understand, Analyse
				Edmund Spenser: Selections from Amoretti	Remember, Understand, Analyse
				John Donne: "The Sunne Rising", "Batter My	Remember, Understand,

			<p>medieval and the modern.</p> <ul style="list-style-type: none"> • Become acquainted with two major genres of English literature, poetry, and drama. • Be able to evaluate the socio-historical-cultural aspects of the Renaissance and the Elizabethan period. 	Heart", "Valediction:Forbidding Mourning"	Analyse
				Christopher Marlowe: Doctor Faustus	Remember, Understand, Analyse, Evaluate
				William Shakespeare: Macbeth	Remember, Understand, Analyse, Create
				William Shakespeare: Twelfth Night	Remember, Understand, Analyse, Evaluate, Create
5	3 rd	ENG-HC-3016 History of English Literature and Forms	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> • Become familiar with the broad and specific periods of British English literature. • Acquire a sense of the historical development of literary forms and genres. • Gain an understanding of the contexts in which literary forms and individual texts emerge. • Learn to analyse texts by applying interpretive methods as representative of broad generic explorations. 	Poetry from Chaucer to the Present	Remember, Understand, Apply, Analyse, Evaluate
				Drama from Everyman to the Present	Remember, Understand, Apply, Analyse, Evaluate
				Fiction	Remember, Understand, Apply, Analyse, Evaluate
				Non-Fictional Prose	Remember, Understand, Apply, Analyse, Evaluate

6	3 rd	<p style="text-align: center;">ENG-HC-3026</p> <p style="text-align: center;">American Literature</p>	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> • Become familiar with the main trends of American literature in its social, cultural, and historical contexts. • Get an overview of American society and its evolutionary stages. • Gain knowledge about the various generic innovations and developments in American literature. • Be able to attempt a comparative analysis of American and British literatures. • Be able to expand their cultural understanding of the world 	Tennessee Williams: The Glass Menagerie	Remember, Understand, Analyse
				Mark Twain: The Adventures of Huckleberry Fin	Remember, Understand, Analyse, Evaluate
				Edgar Allan Poe: "The Purloined Letter"	Remember, Understand, Analyse
				F. Scott Fitzgerald: "The Crack-up"	Remember, Understand, Analyse
				Anne Bradstreet: "The Prologue"	Remember, Understand, Analyse
				Emily Dickinson: "A Bird Came Down the Walk", "Because I Could Not Stop for Death"	Remember, Understand, Analyse, Evaluate
				Walt Whitman: Selections from Leaves of Grass: "O Captain, My Captain", "Passage to India" (Lines: 1-68)	Remember, Understand, Apply, Analyse
				Langston Hughes: "I too"	Remember, Understand, Analyse

				Robert Frost: "Mending Wall"	Remember, Understand, Analyse
				Sherman Alexie: "Crow Testament", "Evolution"	Remember, Understand, Analyse
7	3 rd	ENG-HC-3036 British Poetry and Drama: 17th and 18th Centuries	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> • Become familiar with British poetry and drama in the 17th and 18th centuries. • Feel encouraged to look at the economic, political, and social changes in Britain during the period, viz., the shifts from the Puritan Age to the Restoration and Neoclassical Periods. • Acquire the ability to analyse larger contexts that generated the literature of the period and the effects of such literature on society. • Gain knowledge about significant phenomenon of the period like the scientific revolution in relation to literary production 	John Milton: Paradise Lost: Book I	Remember, Understand, Apply, Analyse
				John Webster: The Duchess of Malfi	Remember, Understand, Analyse
				Aphra Behn: The Rover	Remember, Understand, Analyse, Evaluate, Create
				John Dryden: Mac Flecknoe	Remember, Understand, Apply, Analyse
				Alexander Pope: The Rape of the Lock	Remember, Understand, Apply, Analyse
8	3 rd	ENG-SE-3014		Section A: Poetry	Remember, Understand,

		Creative Writing	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> • Build proficiency in readings and writings • Allow students to explore ideas, feelings, experiences and effectively communicate these stimulus using the written word • Familiarise themselves with techniques, narratology and rhetorical positions 	<p>Discussion/ Class participation topics:</p> <p>What is good poetry?</p> <p>Writing poetry</p> <p>Why poetry</p> <p>Reading poetry</p>	Apply, Analyse
				<p>Section B: Fiction</p> <p>Discussion/ Class participation topics:</p> <p>What is a good story?</p>	Remember, Understand, Apply, Analyse
				<p>Section C Non-Fiction</p> <p>Discussions and assignments:</p> <p>The students will be introduced to Forms of essays</p>	Remember, Understand, Apply, Analyse
				<p>Section D: Workshop</p> <p>Discussing-- why you write, how you write, and what you hope to gain from thiscourse.</p>	Remember, Understand, Analyse

				How is your writing different /similar to others?	
				Reading stories by Writers-in-residence and by participants.	Remember, Understand, Analyse
				How has this course helped you to encourage reading of various texts?	Remember, Understand, Analyse
				How has this course helped you to understand of literature?	Remember, Understand, Analyse
				How have you grown as a writer?	Remember, Understand, Analyse
9	4 th	ENG-HC-4016 British Literature: The 18th Century	After completion of the course, learners will: <ul style="list-style-type: none"> • Acquire knowledge about British literature in the 18th century. • Learn about the reasons the period is known as the age of reason and rationality. 	Jonathan Swift: Gulliver’s Travels (Books III and IV)	Remember, Understand, Analyse
				Samuel Johnson: “London”	Remember, Understand, Analyse
				Thomas Gray: “Elegy Written in a Country Churchyard”	Remember, Understand, Analyse

			<ul style="list-style-type: none"> Gain insight into the rise of the novel and the development of satire. Become acquainted with a particular kind of drama, namely, sentimental comedy 	Daniel Defoe: Moll Flanders	Remember, Understand, Analyse
				Joseph Addison: "Pleasures of the Imagination", The Spectator, 411	Remember, Understand, Analyse
				Oliver Goldsmith: She Stoops to Conquer	Remember, Understand, Analyse
10	4 th	ENG-HC-4026 British Romantic Literature	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> Become familiar with the Romantic Movement in British literature. Be able to comprehend Romanticism's relation with socio-historical developments like industrialism. Understand some key notions of Romanticism, viz., the role of imagination in literature, the poet as an individual, critique of neoclassical ideals, etc. Be able to apply the above-mentioned insights in understanding the prescribed texts. Be able to evaluate the interrelations between human 	William Blake: "The Lamb", "The Chimney Sweeper", "The Tyger", "Introduction" to The Songs of Innocence	Remember, Understand, Analyse
				Robert Burns: "A Bard's Epitaph", "Scots WhaHae"	Remember, Understand, Analyse
				William Wordsworth: "Tintern Abbey", "Upon Westminster Bridge"	Remember, Understand, Apply, Analyse
				Samuel Taylor Coleridge: "Kubla Khan", "Dejection: An Ode"	Remember, Understand, Apply, Analyse
				Percy Bysshe Shelley: "Ode to the West Wind",	Remember, Understand, Analyse

			beings and nature.	"Hymn to Intellectual Beauty", "The Cenci"	
				John Keats: "Ode to a Nightingale", "To Autumn", "On First Looking into Chapman's Homer"	Remember, Understand, Analyse, Evaluate
				Mary Shelley: "Frankenstein"	Remember, Understand, Analyse
11	4 th	ENG-HC-4036 British Literature: The 19th Century	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> • Become acquainted with British literature of the middle and later parts of the 19th century. • Learn about the novel's coming into its own by reading and analysing pathbreaking novels of the time. • Become familiar with the significant poetic efforts and achievements of the period. • Develop human values. 	Jane Austen: Pride and Prejudice	Remember, Understand, Analyse, Evaluate
				Charlotte Bronte: Jane Eyre	Remember, Understand, Analyse
				Charles Dickens: The Pickwick Papers (Chapters: 1, 2, 23, 56, 57)	Remember, Understand, Analyse, Evaluate
				Thomas Hardy: "The Three Strangers"	Remember, Understand, Analyse
				Alfred Tennyson: "The Defence of Lucknow"	Remember, Understand, Analyse

				Robert Browning: "Love Among the Ruins"	Remember, Understand, Analyse
				Christina Rossetti: "Goblin Market"	Remember, Understand, Analyse
12	4 th	ENG-SE-4014 Translation: Principles and Practice	After completion of the course, learners will: <ul style="list-style-type: none"> • Acquire basic skills in translation • It introduces students to the field of translation studies and gives them training in practical translation 	Unit 1: Translation in India: History; Challenges of translation in multilingual conditions; Institutions promoting and commissioning translation; Landmarks of translation in different languages.	Remember, Understand, Analyse
				Unit 2: Practical translation activities Analyse texts translated into English keeping the above concepts, and especially that of equivalence, in mind, at the lexical (word) and syntactical (sentence) levels: Novel : The Story of <i>Felanee</i> by Arupa Patangiya Kalita.	Remember, Understand, Analyse
				Short Story: "Golden Girl" by Lakshminath Bezbarua,	Remember, Understand,

				in the anthology <i>Splendour in the Grass</i> . Ed. Hiren Gohain.	Analyse
				Play: The Fortress of Fire by Arun Sarma. Poem: "Silt" by Nabakanta Barua, Trans. Pradip Acharya	Remember, Understand, Analyse
				Make a back translation into the original English Short Story or passage from a text (Alice in Wonderland by Probina Saikia)	Remember, Understand, Analyse
				Subtitle a film (Assamese – Village Rockstars) (to be discussed in class, a sample shown and then used for internal assessment)	Remember, Understand, Analyse
13	5 th	ENG-HC-5016 British Literature: The 20th Century	After completion of the course, learners will: <ul style="list-style-type: none"> Acquire knowledge about socio-politico-economic as well as aesthetic shifts in the world with 	Joseph Conrad: Heart of Darkness	Remember, Understand, Analyse
				Virginia Woolf: Mrs Dalloway	Remember, Understand, Apply, Analyse

			<p>the breaking of the world wars, through an understanding of 20th century British texts.</p> <ul style="list-style-type: none"> • Become familiar with the voice of modernism in arts and literature. • Get an opportunity to evaluate the chief tenets of modernism, viz., desire to break with the codes and conventions of the past, experiment with new forms and idioms, etc. • Get acquainted with the ethos of postmodernism through a reading of recent poetic and fictional works 	<p>W.B. Yeats: "The Second Coming", "Sailing to Byzantium"</p>	<p>Remember, Understand, Analyse</p>
				<p>T.S. Eliot: "The Love Song of J. Alfred Prufrock", "Journey of the Magi"</p>	<p>Remember, Understand, Analyse, Evaluate</p>
				<p>W.H. Auden: "In Memory of W.B. Yeats"</p>	<p>Remember, Understand, Analyse</p>
				<p>Hanif Kureishi: My Beautiful Laundrette</p>	<p>Remember, Understand, Analyse, Evaluate</p>
				<p>Phillip Larkin: "Church Going"</p>	<p>Remember, Understand, Analyse</p>
				<p>Ted Hughes: "Hawk Roosting"</p>	<p>Remember, Understand, Analyse</p>
				<p>Seamus Heaney: "Casualty"</p>	<p>Remember, Understand, Analyse</p>
				<p>Carol Ann Duffy: "Standing Female Nude"</p>	<p>Remember, Understand, Apply, Analyse</p>
14	5 th	ENG-HC-5026		<p>Mary Wollstonecraft: A Vindication of the Rights</p>	<p>Remember, Understand, Apply, Analyse</p>

		Women's Writing	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> • Become familiar with 19th and 20th century writings by women from different geographical and sociocultural settings. • Get acquainted with the distinct experiences of women articulated in a variety of genres, namely, poetry, novel, short story, and autobiography. • Gain an understanding of the earliest feminist treatises of the western world. • Get an opportunity of reading and analysing texts as a mode of cultural exchange. 	of Woman (Chapters 1 and 2)	
				Rassundari Debi: Excerpts from Amar Jiban	Remember, Understand, Analyse
				Katherine Mansfield: "Bliss"	Remember, Understand, Analyse
				Sylvia Plath: "Daddy", "Lady Lazarus"	Remember, Understand, Analyse, Evaluate
				Alice Walker: The Color Purple	Remember, Understand, Analyse, Evaluate
				Mahashweta Devi: "Draupadi"	Remember, Understand, Analyse, Evaluate
				Nirupama Borgohain: "Celebration"	Remember, Understand, Apply, Analyse
				Adrienne Rich: "Orion"	Remember, Understand, Analyse
				Eunice De Souza: "Advice to Women", "Bequest"	Remember, Understand, Analyse

15	5 th	ENG-HE-5036 Literature of the Indian Diaspora	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> acquire knowledge extensively on ideas of transnationalism, exile, migration, displacement, and so on. Gain and understanding of the strong presence of the diasporic Literature in the global scene understanding the diasporic Literature in the global scene and diasporic experience with particular reference to Indian diasporic writers. 	M. G. Vassanji: <i>The Book of Secrets</i> (Penguin, India)	Remember, Understand, Analyse
				Rohinton Mistry: <i>A Fine Balance</i> (Alfred A Knopf)	Remember, Understand, Apply, Analyse, Evaluate, Create
				Meera Syal: <i>Anita and Me</i> (Harper Collins)	Remember, Understand, Analyse, Evaluate
				Jhumpa Lahiri: <i>The Namesake</i> (Houghton Mifflin Harcourt)	Remember, Understand, Analyse
16	5 th	ENG-HE-5026 Modern Indian Writing in English Translation	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> Become familiar with Indian literature written in the regional languages. Be able to explore the diverse cultural and regional contexts of the prescribed texts. Gather insight into socio-political issues of the present times. Be able to carry out comparative studies of texts from different regions and in multiple languages. 	Premchand: "The Shroud"	Remember, Understand, Apply, Analyse
				Ismat Chughtai: "The Quilt"	Remember, Understand, Apply, Analyse
				Bhabendranath Saikia: "Celebration"	Remember, Understand, Apply, Analyse, Evaluate
				Fakir Mohan Senapati: "Rebati"	Remember, Understand, Apply, Analyse
				Rabindra Nath Tagore: "Light, Oh Where is the	Remember, Understand, Apply, Analyse, Create

			<ul style="list-style-type: none"> Delve into the debates surrounding Indian writings in English vis-à-vis Indian writings in the regional languages. 	Light?", "When My Play was with thee"	
				G.M. Muktibodh: "The Void", "So Very Far"	Remember, Understand, Apply, Analyse
				Amrita Pritam: "I Say Unto Waris Shah"	Remember, Understand, Apply, Analyse
				Thangjam Ibopishak Singh: "Dali, Hussain, or Odour of Dream, Colour of Wind", "The Land of the Half-Humans"	Remember, Understand, Apply, Analyse
				Dharamveer Bharati: Andha Yug	Remember, Understand, Apply, Analyse
				Hiren Bhattacharyya: "What Is It That Burns in Me?"	Remember, Understand, Apply, Analyse, Evaluate, Create
17	5 th	ENG-HE-5056 Literary Criticism and Literary Theory	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> Become familiar with important texts on literary criticism and literary theory. 	William Wordsworth: Preface to the Lyrical Ballads	Remember, Understand, Apply, Analyse
				William Wordsworth: Preface to the Lyrical Ballads	Remember, Understand, Apply, Analyse, Evaluate

			<ul style="list-style-type: none"> • Grasp the differences between literary theory and literary criticism. • Understand the shifts in literary interpretations and critical approaches. • Become equipped with analytical and interpretive tools to read texts across genres. • Apply the above-mentioned tools in the theoretical and practical criticism of texts 	Virginia Woolf: "Modern Fiction"	Remember, Understand, Analyse
				T.S. Eliot: "Tradition and the Individual Talent"	Remember, Understand, Analyse
				I.A. Richards: Principles of Literary Criticism (Chapters: 1, 2 and 34)	Remember, Understand, Apply, Analyse
				Cleanth Brooks: "The Language of Paradox"	Remember, Understand, Apply, Analyse
				Terry Eagleton: "Introduction" to Marxism and Literary Criticism	Remember, Understand, Apply, Analyse, Evaluate
				Elaine Showalter: "Twenty Years on: A Literature of Their Own Revisited"	Remember, Understand, Analyse, Evaluate
				Toril Moi: "Introduction" to Sexual/Textual Politics	Remember, Understand, Analyse
				Jacques Derrida: "Structure, Sign and Play in the Discourse of the Human Sciences"	Remember, Understand, Apply, Analyse

				Michel Foucault: "Truth and Power"	Remember, Understand, Analyse, Evaluate
				Mahatma Gandhi: "Passive Resistance", "Education"	Remember, Understand, Analyse, Evaluate
				Edward Said: "The Scope of Orientalism"	Remember, Understand, Apply, Analyse
				Frantz Fanon: Black Skin, White Masks (Chapter 4)	Remember, Understand, Analyse
18	6 th	ENG-HC-6016 Modern European Drama	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> • Get acquainted with innovative dramatic works of playwrights from different parts of Europe • Develop an understanding of the emergence of avant-garde movements and trends in reference to drama. • Learn about dramatic devices and techniques used during the period of modernism in Europe which influenced theatrical practices in other parts of the world. • Be able to analyse literary-social-intellectual movements like 	Henrik Ibsen: Ghosts	Remember, Understand, Analyse
				Anton Chekhov: The Cherry Orchard	Remember, Understand, Analyse
				Bertolt Brecht: The CaucasianChalk Circle	Remember, Understand, Analyse

			existentialism, absurdism, nihilism, etc		
19	6 th	ENG-HC-6026 Postcolonial Literatures	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> • Familiarize themselves with European colonialism since the 15th century. • Learn about the effects of the experience of colonialism around the world. • Get acquainted with texts from postcolonial literatures across the world. • Delve into the conditions of postcolonial peoples and societies. • Acquire an introduction to regional/cultural peculiarities as well as shared experiences of the postcolonial condition. 	Samuel Beckett: Waiting for Godot	Remember, Understand, Analyse, Evaluate
				Gabriel Garcia Marquez: Chronicle of a Death Foretold	Remember, Understand, Analyse
				Bessie Head: "The Collector of Treasures", "Ama Ata Aidoo": "The Girl who Can"	Remember, Understand, Analyse
				Grace Ogot: "The Green Leaves"	Remember, Understand, Analyse
				Shyam Selvadurai: Funny Boy	Remember, Understand, Analyse, Evaluate
				Pablo Neruda: "Tonight I can Write", "The Way Spain Was"	Remember, Understand, Analyse
				Derek Walcott: "A Far Cry from Africa", "Names"	Remember, Understand, Analyse

				David Malouf: "Revolving Days", "Wild Lemons"	Remember, Understand, Analyse
				Easterine Kire: When the River Sleeps	Remember, Understand, Analyse
20	6 th	ENG-HE-6036 Partition Literature	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> • Learn about the far-reaching impact of partition on people. • View partition as leading not only to momentary but also continual changes in human lives, emotions and values. • Comprehend the trauma and sufferings of people as a result of partitions in the indian subcontinent. • Analyse and evaluate how writers across regions deal with partition and its aftermath. • Develop human values like empathy and sensitivity 	Intizar Husain: Basti	Remember, Understand, Analyse
				Amitav Ghosh: The Shadow Lines	Remember, Understand, Analyse, Evaluate
				Dibyendu Palit: "Allam's Own House"	Remember, Understand, Analyse
				Manik Bandhopadhyay: "The Final Solution"	Remember, Understand, Analyse
				Sa'adat Hasan Manto: "Toba Tek Singh"	Remember, Understand, Analyse, Evaluate
				Lalithambika Antharjanam: "A Leaf in the Storm"	Remember, Understand, Analyse
				Faiz Ahmad Faiz: "For Your Lanes, My Country"	Remember, Understand, Analyse

				Jibanananda Das: "I Shall Return to This Bengal"	Remember, Understand, Analyse
				Gulzar: "Toba Tek Singh"	Remember, Understand, Analyse, Evaluate
21	6 th	ENG-HE-6056 Life Writing	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> • Understand the latest trends in life writing. • Learn about the histories, cultural aspects and regional verities from life writing • Be able to analyse life and explore the life of an author understand the dynamics of the self-society • Analyse the rule of memory in autobiography 	<p>James Olney, ‘A Theory of Autobiography’ in <i>Metaphors of Self: the meaning of Autobiography</i> (Princeton: Princeton University Press, 1972) pp. 3-50</p>	Remember, Understand, Analyse
				<p>Laura Marcus, ‘The Law of Genre’ in <i>Auto/biographical Discourses</i> (Manchester: Manchester University Press, 1994) pp. 229-72.</p>	Remember, Understand, Analyse, Evaluate
				<p>Linda Anderson, ‘Introduction’ in <i>Autobiography</i> (London: Routledge, 2001) pp.1-17.</p>	Remember, Understand, Analyse
				<p>Mary G. Mason, ‘The Other Voice: Autobiographies of women</p>	Remember, Understand, Analyse, Evaluate

				Writers' in <i>Life/Lines: Theorizing Women's Autobiography</i> , Edited by Bella Brodzki and Celeste Schenck (Ithaca: Cornell University Press, 1988) pp. 19-44.	
				Carolyn G. Heilbrun, 'Introduction' in <i>Writing a Woman's Life</i> (New York: Ballantine Books, 1988) pp. 11-31.	Remember, Understand, Analyse, Evaluate

2. b) BA (Regular, Generic) English

22	1 st	ENG-CC-1016 English I	After completion of the course, learners will: <ul style="list-style-type: none"> • Be able to read and respond to representations of issues in contemporary life and culture in the english language. • Acquaint themselves with themes and topics that are stimulating, insightful and informative. • Develop reading skills of 	Arthur Miller: All my Sons	Remember, Understand, Analyse
				George Orwell (1903-1950): 'Shooting an Elephant'	Remember, Understand, Analyse
				D.H. Lawrence: 'The Woman Who Rode Away'	Remember, Understand, Analyse
				Manoj Das (1934-): 'The Misty Hour'	Remember, Understand, Analyse

			<p>different genres,</p> <ul style="list-style-type: none"> Acquire multidimensional knowledge of the subjects contained in texts that are contextualized in different socio-cultural and political events and movements. 	<p>Munin Barkotoki (1915-1995): ‘Krishna Kanta Handiqui’</p>	<p>Remember, Understand, Analyse</p>
				<p>Rohinton Mistry (1952-): ‘Running Water’</p>	<p>Remember, Understand, Analyse</p>
				<p>Michael Ondaatje (1943-): ‘Angulimala’</p>	<p>Remember, Understand, Analyse</p>
				<p>Salman Rushdie: ‘Good Advice is Rarer than Rubies’</p>	<p>Remember, Understand, Analyse</p>
				<p>Grammar: Make sentences using common phrases and idioms</p>	<p>Remember, Understand, Analyse</p>
				<p>Common Errors: prepositions, etc.</p>	<p>Remember, Understand, Analyse</p>
				<p>To be answered as directed tense, Comprehension</p>	<p>Remember, Understand, Analyse</p>
				<p>Correct use of verbs,</p>	<p>Remember, Understand, Analyse</p>

23	2 nd	ENG-CC-2016 English II	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> • Expand cultural literacy by studying literature from different regions and periods, promoting an understanding of diverse perspectives. • Acquaint themselves with the latest developments in the field of literature not only from Britain but also from other parts of the world by reading and analyzing modern English literature. • Promotes analytical thinking and evaluates diverse perspectives. • Explore new ideas and become motivated to undertake comparative studies using exposure to various texts from around the world in the curriculum. • Enhance writing skills across various genres, styles, and formats to effectively convey ideas and information. • Foster moral and ethical values for both individual 	William Blake (1757-1827): ‘The Lamb’	Remember, Understand, Analyse
				Samuel Taylor Coleridge: ‘Christabel’	Remember, Understand, Analyse
				Matthew Arnold: ‘Dover Beach’	Remember, Understand, Analyse
				Langston Hughes (1902-1967): ‘Harlem’	Remember, Understand, Analyse
				Nissim Ezekiel (1924-2004): ‘Shillong’	Remember, Understand, Analyse
				Wole Soyinka (1934-): ‘Telephone Conversation’	Remember, Understand, Analyse
				David Constantine (1944-): ‘The House’	Remember, Understand, Analyse
				Federico Garcia Lorca (1898-1936): ‘The Sleepwalking Ballad’	Remember, Understand, Analyse
				Seamus Heaney (1939-): ‘Punishment’	Remember, Understand, Analyse

			and collective prosperity.	Imtiaz Dharkar: 'Purdah 1'	Remember, Understand, Analyse
				Grammar and Composition: Voice Change,	Remember, Understand, Analyse
				Use of Determiners	Remember, Understand, Analyse
				Dialogue Writing, Descriptive Writing	Remember, Understand, Analyse
				Precis Writing/Report Writing	Remember, Understand, Analyse

3. a) BA (Honours) Education

SL.NO.	SEMESTER	COURSE NAME AND CODE	COURSE OUTCOMES	UNIT/CHAPTER	BLOOM'S TAXONOMY LEVELS
1	1 st	EDU-HC-1016 Principles Of Education	<ul style="list-style-type: none"> • Acquaint the sound principles of education. • Acquaint the important concepts of education, curriculum, democracy, discipline, and freedom. • Develop knowledge about different aims of education, various types of curriculums, correlation of studies, and forms of discipline. • Familiarize with democratic idea of modern education 	Unit 1: Meaning and Concept of Education.	Remembering, Understanding
				Unit 2: Aims of Education.	Remembering, Understanding, Analysing
				Unit 3: Curriculum	Understanding, Analysing, Evaluating
				Unit 4: Discipline and Freedom.	Understanding, Analysing
				Unit 5: Democracy and Education	Understanding, Analysing
2	1 st	EDU-HC-1026 Psychological Foundations of Education	<ul style="list-style-type: none"> • Explain the need of educational psychology in teaching learning process. • Describe the nature and theories of learning and role of motivation in learning. • Understand the concept of memory, forgetting, attention and interest, and understand the relationship between education and psychology. 	Unit 1: Psychology and Education	Remembering, Understanding
				Unit 2: Learning and Motivation	Understanding, Analysing, Application
				Unit 3: Memory, Attention, and Interest.	Understanding, Analysing, Application

			<ul style="list-style-type: none"> • Understand intelligence, its theories and measurement. 		
3	2 nd	<p>EDU-HC-2016</p> <p>Philosophical And Sociological Foundation of Education</p>	<ul style="list-style-type: none"> • Know the concept of philosophy and its relationship with education. • Understand the educational implications of different Indian schools of philosophy. • Understand the educational implications of different Western schools of philosophy. • Know the concept of sociology and its relationship with education. • Develop understanding about the concept of educational sociology, social groups, and socialization. 	Unit 1: Philosophy and Education	Remembering, Understanding, Analysing, Evaluating
				Unit 2: Various Indian Schools of Philosophy and Education	Understanding, Evaluating, Analysing
				Unit 3: Various Western Schools of Philosophy and Education	Understanding, Evaluating
				Unit 4: Sociology and Education	Understanding, Analysing
				Unit 5: Socio-Cultural Context of Education.	Understanding, Evaluating, Analysing
4	2 nd	<p>EDU-HC-2026</p> <p>Development Of Education in India-I</p>	<ul style="list-style-type: none"> • Recount the concept of Ancient Indian education system. • Describe the education system in Ancient India, particularly Vedic Education. • Examine the education system in Medieval India. • Analyse the education system during the British 	Unit 1: Education in Ancient and Medieval India	Remembering, Understanding, Evaluating
				Unit 2: Education in British India: The Beginning	Understanding
				Unit 3: Education in British India: In 19th Century	Understanding, Analysing, Evaluating

			Period.	Unit 4: Rise of Nationalism and its Impact on Education	Understanding, Analysing
				Unit 5: Education in British India: A Period of Experiment	Understanding, Analysing, Evaluating
5	3 rd	EDU-HC-3016 Development of Education in India-II	<ul style="list-style-type: none"> • Understand the educational situation during the time of Independence. • Explain the recommendations and educational importance of different Education Commission and Committees in post Independent India. • Analyze the National Policy on Education in different tomes. • Accustom with the recent Educational Development in India 	Unit 1: Development of Indian Education in the Post Independence Period	Remembering, Understanding, Analysing Evaluating
				Unit 2: Development of Secondary Education in the Post Independent Period	Understanding, Analysing, Evaluating
				Unit 3: Education Commission: 1964-66	Understanding, Evaluating
				Unit 4: National Policies on Education in Post Independent Period	Understanding
				Unit 5: Recent Developments and Programmes in Indian Education	Understanding, Analysing
6	3 rd	EDU-HC-3026 Educational Technology and Teaching Methods	<ul style="list-style-type: none"> • 1.Understand the objective of educational technology in teaching learning process. • Acquaint with innovations in 	Unit 1: Educational Technology	Remembering, Understanding
				Unit 2: Information and	Understanding, Analysing,

			<p>the field of education through technology.</p> <ul style="list-style-type: none"> • Understand about various methods and devices of teaching. • Acquaint with levels, effectiveness of teaching and classroom management. • Understand the strategies of effective teaching as a profession. 	<p>Communication Technology in Teaching- Learning</p>	<p>Application</p>
				<p>Unit 3: Models of Teaching</p>	<p>Understanding</p>
				<p>Unit 4: Methods and Techniques of Teaching</p>	<p>Understanding, Analysing, Application.</p>
				<p>Unit 5: Lesson Planning and Micro Teaching</p>	<p>Understanding, Application.</p>
7	3 rd	<p>EDU-HC-3036</p> <p>Value And Peace Education</p>	<ul style="list-style-type: none"> • Understand the concept and meaning of value. • Aware about the role of educational institutions in building a value-based society. • Understand the meaning and concept of peace and its importance in human life, the importance of peace education and its relevance at national and international level. • Identify the different issues/challenges in imparting peace education. • Identify the strategies and skills in promoting peace education at institutional level. 	<p>Unit 1: Value</p>	<p>Understanding, Evaluation.</p>
				<p>Unit 2: Types of Values, their characteristics, functions and educational significance</p>	<p>Understanding, Analysing.</p>
				<p>Unit 3: Value Education</p>	<p>Understanding, Analysing, Evaluation.</p>
				<p>Unit 4: Peace Education</p>	<p>Understanding, Analysing, Evaluation</p>
				<p>Unit 5: Challenges of Peace Education and Role of Different Organisations</p>	<p>Understanding, Analysing.</p>

8	4 th	EDU-HC-4016 Great Educational Thinkers	<ul style="list-style-type: none"> • Learn about the views of thinkers in an educational context. • Learn about the relevance of some of their thoughts in the present-day context. • Learn the Philosophy of life of different Educational Thinkers and their works. 	Unit 1: Educational thoughts of Srimanta Sankardeva	Remembering, Understanding, Analysing
				Unit 2: Educational thoughts of Mahatma Gandhi and Rabindranath Tagore	Understanding, Analysing
				Unit 3: Educational thoughts of A.P.J. Abdul Kalam.	Understanding, Analysing
				Unit 4: Educational thoughts of Rousseau and Froebel	Understanding, Analysing
				Unit 5: Educational thoughts of John Dewey and Madam Maria Montessori	Understanding , Analysing
9	4 th	EDU-HC-4026 Educational Statistics and Practical	<ul style="list-style-type: none"> • Develop the basic concept of Statistics. • Be acquainted with different statistical procedures used in Education. • Develop the ability to represent educational data through graphs. • Familiarize about the Normal Probability Curve and its applications in 	Unit 1: Basics of Educational Statistics	Understanding ,Application
				Unit 2: Graphical presentations of data	Understanding , Application
				Unit 3: Co-efficient of correlation and percentiles	Understanding , Application
				Unit 4: Normal Probability Curve and its applications	Understanding , Application

			Education.	Unit 5: Statistical Practical	Understanding , Application
10	4 th	EDU-HC-4036 Emerging Issues in Education	<ul style="list-style-type: none"> • Acquaint with major emerging issues national, state, and local. • Acquaint with the various issues in education that are emerging in the recent years in the higher education system. • Address the various problems and challenges of education in India at all levels. 	Unit 1: Social Inequality in Education and Constitutional Safeguards	Remembering, Understanding
				Unit 2: Liberalization, Privatization and Globalization of Education	Understanding , Analysing, Evaluating
				Unit 3: Issues related to students	Understanding , Analysing,
				Unit 4: Environmental Education and Population education	Understanding Analysing, Evaluating
				Unit 5: Multi-cultural education and Alternative Education	Understanding, Analysing
11	5 th	EDU-HC-5016 Measurement and Evaluation in Education and Practical	<ul style="list-style-type: none"> • Understand the concept of measurement and evaluation in education. • Acquaint with the general procedure of test construction and characteristics of a good test. • Develop an understanding of 	Unit 1: Measurement and Evaluation in Education.	Understanding, Analysing.
				Unit 2: Test Construction	Understanding.
				Unit 3: Educational	Understanding, Analysing,

			<p>different types of educational tests and their uses.</p> <ul style="list-style-type: none"> • Acquaint about personality test, and aptitude tests. 	Achievement Test	Application.
				Unit 4: Personality Test	Understanding Analysing.
				Unit 5: Laboratory Practical	Understanding, Analysing, Creating.
12	5 th	EDU-HC-5026 Guidance and Counselling	<ul style="list-style-type: none"> • Understand the concept, need and importance of Guidance and Counselling. • Know the different types and approaches to Guidance and Counselling. • Acquaints with the organization of guidance service and school guidance clinic. • Understand the challenges faced by the teacher as guidance worker. 	Unit 1: Introduction to Guidance	Remembering, Understanding.
				Unit 2: Introduction to Counselling	Understanding, Analysing.
				Unit 3: Organisation of Guidance Service	Understanding, Analysing.
				Unit 4: Guidance needs of Students	Understanding, Evaluation.
				Unit 5: School Guidance Programme	Understanding, Analysing, Evaluating.
13	5 th	EDU-HE-5016 Continuing Education	<ul style="list-style-type: none"> • Know the concept, objectives, scope, and significance of continuing education in the context of present scenario. • Understand about different aspects and agencies of 	Unit 1: Continuing Education.	Remembering, Understanding, Analysing.
				Unit 2: Methodologies and Issues of Continuing Education	Understanding, Analysing.

			<p>continuing education.</p> <ul style="list-style-type: none"> • Realize different methods and techniques as well as issues of continuing education. • Know the meaning of open education and realize the importance of open school and open universities in continuing education. • Understand the development of adult education in India, kinds of adult education and different problems of adult education. 	<p>Unit 3: Open Education.</p>	<p>Understanding, Analysing.</p>
				<p>Unit 4: Adult Education</p>	<p>Understanding Analysing, Evaluating.</p>
				<p>Unit 5: Recent Literacy Programmes in India</p>	<p>Understanding</p>
14	5 th	EDU-HE-5026 Developmental Psychology	<ul style="list-style-type: none"> • Understand the basic concepts relating to development. • Acquaint about heredity and environmental factors affecting pre-natal development. • Understand the development aspects during infancy and childhood. • Understand the development aspects of adolescence, importance of adolescence period and problems associated with this stage. 	<p>Unit 1: Introduction to Developmental Psychology</p>	<p>Remembering, Understanding, Evaluating.</p>
				<p>Unit 2: Infancy</p>	<p>Understanding, Evaluating.</p>
				<p>Unit 3: Childhood</p>	<p>Understanding, Evaluating.</p>
				<p>Unit 4: Adolescence</p>	<p>Understanding, Analysing.</p>
				<p>Unit 5: Social, Emotional and Personality Development of</p>	<p>Understanding, Analysing.</p>

				Adolescence	
15	5 th	EDU-HE-5036 Human Rights Education	<ul style="list-style-type: none"> • Explain the basic concept, nature, and scope of human rights. • Describe the meaning, nature, principles, curriculum, and teaching methods of human rights education at different levels of Education. • Know the role of United Nations on human rights. • Understand enforcement mechanism in India and know the role of advocacy groups. 	Unit 1: Basic Concept of Human Rights	Remembering, Understanding, Analysing.
				Unit 2: United Nations and Human Rights	Understanding.
				Unit 3: Human Rights-Enforcement Mechanism in India	Understanding , Analysing.
				Unit 4: Role of Advocacy Groups for Promotion of Human Rights	Analysing.
				Unit 5: Human Rights and Marginalised Sections	Analysing, Evaluating.
16	5 th	EDU-HE-5046 Teacher Education in India	<ul style="list-style-type: none"> • Explain the concept, scope, aims and objectives and significance of teacher education. • Acquaint with the development of Teacher Education in India. • Acquaint with the different organizing bodies of teacher education in India and their functions in preparation of teachers for different levels of 	Unit 1: Conceptual Framework and Historical Perspectives of Teacher Education in India	Remembering, Understanding, Analysing.
				Unit 2: Teacher Education for Different Levels of Education	Understanding, Analysing.
				Unit 3: Structure and Organisations of Teacher	Understanding.

			<p>education.</p> <ul style="list-style-type: none"> • Acquaint with the innovative trends and recent issues in teacher education, and be able to critically analyse the status of teacher education in India. • Understand and conceive the qualities, responsibilities, and professional ethics of teachers 	Education in India	
				Unit 4: Status of Teacher Education in India: Trends, Issues and Challenges	Understanding, Evaluating.
				Unit 5: Quality, Responsibility and Professional Ethics of Teachers	Understanding, Analysing, Evaluating.
17	6 th	EDU-HC-6016 Education and Development	<ul style="list-style-type: none"> • Relation between education and development. • Educational development in the post globalization era. • Role of education in community development. • Education for human resource development. • Economic and political awareness through education. 	Unit 1: Basic Concepts of Education and Development	Remembering, Understanding, Evaluating.
				Unit 2: Education and Community Development	Understanding, Analysing.
				Unit 3: Education and Human Resource Development	Understanding, Analysing.
				Unit 4: Education and Economic Development	Understanding, Analysing, Evaluating.
				Unit 5: Education and Developing Political Awareness	Understanding, Analysing.
18	6 th	EDU-HC-6026	<ul style="list-style-type: none"> • Explain the process of conducting a Project. 		Understanding, Applying, Evaluating, Analysing,

		Project			Creating.
19	6 th	EDU-HE-6016 Mental Health and Hygiene	<ul style="list-style-type: none"> • Prepare a project report. 		
			<ul style="list-style-type: none"> • Acquaint with the fundamentals and development of mental health and the characteristics of a mentally healthy person. 	Unit 1: Fundamentals of Mental Health	Understanding.
			<ul style="list-style-type: none"> • Understand the concept and importance of mental hygiene and its relationship with mental health. 	Unit 2: Mental Hygiene-Meaning and Definitions	Understanding, Analysing.
			<ul style="list-style-type: none"> • Acquire knowledge about the principles, factors promoting mental health and the role of home, school, and society in maintaining proper mental health. 	Unit 3: Education and Mental Health	Understanding, Analysing, Evaluating.
			<ul style="list-style-type: none"> • Learn the meaning and problem of adjustment and the different adjustment mechanisms. 	Unit 4: Preservation of Mental Health and Hygiene	Understanding, Analysing
			<ul style="list-style-type: none"> • Familiarize with the concept and issues of positive psychology, mental health of women, role of WHO and stress management. 	Unit 5: Mental Health and Yoga	Understanding, Analysing

20	6 th	EDU-HE-6026 Special Education	<ul style="list-style-type: none"> • Understand the meaning and importance of special education. • Acquaint with the different policies and legislations of special education. • Familiarize with the different types of special children with their characteristics. • Know about different issues, educational provisions, and support services of special education. 	Unit 1: Special Education	Understanding, Analysing, Evaluating
				Unit 2: Physically Challenged Children	Understanding, Analysing, Evaluating
				Unit 3: Children with Intellectual Disability (Mental Retardation) and gifted	Understanding, Analysing
				Unit 4: Children with Learning Disability	Understanding, Analysing, Evaluating
				Unit 5: Policies, Legislation and Services	Understanding, Analysing, Application
21	6 th	EDU-HE-6036 Educational Management	<ul style="list-style-type: none"> • Develop an understanding of the basic concept of educational management. • Know about the various resources in education. • Understand the concept and importance of educational planning. • Know about the financial resources and financial 	Unit 1: Introduction to Educational Management	Understanding, Analysing
				Unit 2: Resources in Education	Understanding, Analysing
				Unit 3: Educational Planning	Understanding
				Unit 4: Institutional Planning	Understanding, Analysing, Application

			management in education.	Unit 5: Financing of Education and Recent Trends in Management	Understanding, Analysing
22	6 th	EDU-HE-6046 Women and Society	<ul style="list-style-type: none"> • Know the changing role of women in India. • Understand gender discrimination in Indian society. • Understand the constitutional provisions for women and their rights. • Understand women empowerment. • Develop an awareness and sensitivity towards women. 	Unit 1: Status and Role of Women	Understanding, Analysing
				Unit 2: Constitutional Provisions and Rights of Women	Understanding
				Unit 3: Gender Inequalities in School and Society	Understanding, Evaluating
				Unit 4: Women Empowerment	Understanding, Analysing
				Unit 5: The Roles of Men and Women and its Implications	Understanding, Analysing

3. b) BA (Regular, Generic) Education

23	1 st	EDU-HG-1016 Introduction of Education	<ul style="list-style-type: none"> • Acquaint the sound principles of education. • Acquaint the important concepts of education, curriculum, democracy, 	Unit 1: Concept of Education	Remembering, Understanding
				Unit 2: Philosophy and Education	Remembering, Understanding, Analysing

			<p>discipline, and freedom.</p> <ul style="list-style-type: none"> • Develop knowledge about different aims of education, various types of curriculums, correlation of studies, and forms of discipline. • Familiarize with democratic idea of modern education 	<p>Unit 3: Psychology and Education</p>	<p>Understanding, Analysing, Evaluating</p>
				<p>Unit 4: Education for National Integration and International Understanding</p>	<p>Understanding, Analysing</p>
				<p>Unit 5: Sociology and Education</p>	<p>Understanding, Analysing</p>
24	2 nd	<p>EDU-HG-2016</p> <p>Psychology of Adolescents</p>	<ul style="list-style-type: none"> • Know the concept of adolescent psychology • Understand the Physical and mental development of adolescent • Know the social development of adolescents • Know the problems of delinquency of adolescents 	<p>Unit 1: Introduction of adolescent psychology</p>	<p>Remembering, Understanding, Evaluating</p>
				<p>Unit 2: Physical and Mental Development</p>	<p>Understanding</p>
				<p>Unit 3: Social Development</p>	<p>Understanding, Analysing, Evaluating</p>
				<p>Unit 4: Emotional and Personality Development</p>	<p>Understanding, Analysing</p>
				<p>Unit 5: Delinquency</p>	<p>Understanding, Analysing, Evaluating</p>
25	3 rd	<p>EDU-HG-3016</p> <p>Guidance And Counselling</p>	<ul style="list-style-type: none"> • Understand the concept, need and • importance of Guidance and Counselling. 	<p>Unit 1: Introduction to Guidance</p>	<p>Remembering, Understanding.</p>
				<p>Unit 2: Introduction to Counselling</p>	<p>Understanding,</p>

			<ul style="list-style-type: none"> • Know the different types and approaches to Guidance and Counselling. • Acquaints with the organization of guidance service and school guidance clinic. • Understand the challenges faced by the teacher as guidance worker. 		Analysing.
				Unit 3: Organisation of Guidance Service	Understanding, Analysing.
				Unit 4: Guidance needs of Students	Understanding, Evaluation.
				Unit 5: School Guidance Programme	Understanding, Analysing, Evaluating.
26	4 th	EDU-HG-4016 History Of Education in India	<ul style="list-style-type: none"> • Recount the concept of Ancient Indian education system. • Describe the education system in Ancient India, particularly Vedic Education. • Examine the education system in Medieval India. • Analyse the education system during the British Period 	Unit 1: Education in Ancient and Medieval India	Remembering, Understanding, Evaluating
				Unit 2: Education in British India: The Beginning	Understanding
				Unit 3: Education in British India: In 19th Century	Understanding, Analysing, Evaluating
				Unit 4: Rise of Nationalism and its Impact on Education	Understanding, Analysing
				Unit 5: Education in British India: A Period of Experiment.	Understanding, Analysing, Evaluating
27	5 th	EDU-RG-5016	<ul style="list-style-type: none"> • Understand the basic concepts relating to 	Unit 1: Introduction to Developmental Psychology	Remembering, Understanding, Evaluating.

		Developmental Psychology	<p>development.</p> <ul style="list-style-type: none"> • Acquaint about heredity and environmental factors affecting pre-natal development. • Understand the development aspects during infancy and childhood. • Understand the development aspects of adolescence, importance of adolescence period and problems associated with this stage. 	Unit 2: Infancy	Understanding, Evaluating.
				Unit 3: Childhood	Understanding, Evaluating.
				Unit 4: Adolescence	Understanding, Analysing.
				Unit 5: Social, Emotional and Personality Development of Adolescence	Understanding, Analysing.
28	6 th	EDU-RG-6016 Mental Health and Hygiene	<ul style="list-style-type: none"> • Acquaint with the fundamentals and development of mental health and the characteristics of a mentally healthy person. • Understand the concept and importance of mental hygiene and its relationship with mental health. • Acquire knowledge about the principles, factors promoting mental health and the role of home, school, and peer group. 	Unit 1: Fundamentals of Mental Health	Understanding.
				Unit 2: Mental Hygiene-Meaning and Definitions	Understanding, Analysing
				Unit 3: Education and Mental Health	Understanding, Analysing, Evaluating.
				Unit 4: Preservation of Mental Health and Hygiene	Understanding, Analysing
				Unit 5: Mental Health and Yoga	Understanding, Analysing

4. a) BA/BSc (Honours) Economics

SL. NO.	SEMESTER	PAPER CODE & TITLE	COURSE OUTCOMES	UNIT/ CHAPTER	BLOOM'S TAXONOMY LEVEL
1	1 st	ECO-HC-1016 Introductory Microeconomics	<ul style="list-style-type: none"> Through this course students are able to understand what is economics is all about and how economy operates along with consumer behaviour i.e. rationality of the consumer along with producers rationality. Students are able understand Why to study economics, its importance, scope and method of economics; the economic problem: scarcity and choice; the question of what to produce, how to produce and how to distribute output; science of economics; the basic competitive model; prices, property rights and profits; incentives and information; rationing; opportunity sets; economic systems; reading and working with graphs. 	Unit 1 : Exploring The subject matter of Economics	Remember, Understand
				Unit 2 : Supply and Demand : How markets Work, Markets and Welfare	Remember, Understand
				Unit 3 : The Households	Remember, Understand, Analyse, Apply
				Unit 4 : The Firm and Perfect Market Structure	Remember, Understand, Analyse
				Unit 5: Imperfect Market Structure	Remember, Understand, Analyse

				Unit 6 : Input Markets	Understand, Analyse
2	1 st	ECO-HC-1026 Mathematical Methods in Economics-I	<ul style="list-style-type: none"> The objective of this sequence is to transmit the body of basic mathematics that enables the study of economic theory at the undergraduate level, specifically the courses on microeconomic theory, macro-economic theory, statistics and econometrics set out in this syllabus. Through this course, students are able to understand particular economic models are not the ends, but the means for illustrating the method of applying mathematical techniques to economic theory in general 	Unit 1 : Preliminaries	Remember, Understand
				Unit 2 : Functions of one real variables	Remember, Understand
				Unit 3 : Differential Calculus	Remember, Understand, Analyse, Apply
				Unit 4 : Single variable optimization	Remember, Understand, Analyse
				Unit 5 : Integration of functions	Remember, Understand, Analyse
3	2 nd	ECO-HC-2016 Introductory Macroeconomics	<ul style="list-style-type: none"> This course aims to introduce the students to the basic concepts of Macroeconomics. Now with this course students are able to understand 	Unit 1 : Introduction to Macroeconomics and National Income Accounting	Remember, Understand

			<p>how Macroeconomics deals with the aggregate economy.</p> <ul style="list-style-type: none"> This course discusses the preliminary concepts associated with the determination and measurement of aggregate macroeconomic variable like savings, investment, GDP, money, inflation, and the balance of payments. 	Unit 2 : Money	Remember, Understand
				Unit 3 : Inflation	Remember, Understand, Analyse, Apply
				Unit 4 : The closed Economy in the short-run	Remember, Understand, Analyse
4	2 nd	ECO-HC-2026 Mathematical Methods In Economics - II	<ul style="list-style-type: none"> The objective of this sequence is to provide knowledge to the students about various mathematical concepts, whom they can apply to find solution to various economic problems i.e. through applying mathematics into economic concepts. This course is much more illustrated version from the previous course (semester I) which will provide in-depth knowledge to the students about various economic 	Unit 1 : Linear algebra	Remember, Understand, Analyse, Apply
				Unit 2 : Functions of several real variables	Remember, Understand, Analyse
				Unit 3 : Multi-variable optimization	Remember, Understand, Analyse, Apply
				Unit 4 : Differential	Remember, Understand,

			applications.	Equation	Analyse, Apply
				Unit 5 : Difference Equation	Remember, Understand, Analyse, Apply
5	3 rd	ECO-HC-3016 Intermediate Micro -Economics - I	<ul style="list-style-type: none"> The course is designed to provide a sound training in microeconomic theory to formally analyze the behavior of individual agents. Since students are already familiar with the quantitative techniques in the previous semesters, mathematical tools are used to facilitate understanding of the basic concepts, here students are able to understand the behaviour of the consumer and the producer and also covers the behaviour of a competitive firm (more illustrated than the previous semester) 	Unit 1 : Consumer Theory	Remember, Understand
				Unit 2: Production, Costs and Perfect Competition	Remember, Understand
6	3 rd	ECO-HC-3026 Intermediate Macroeconomics - I	<ul style="list-style-type: none"> This course introduces the students to formal modeling of a macro-economy in terms of analytical tools. It discusses various alternative theories of 	Unit 1 : Aggregate Demand and Aggregate Supply Curve	Remember, Understand

			<p>output and employment determination in a closed economy in the short run as well as medium run, and the role of policy in this context.</p> <ul style="list-style-type: none"> It also introduces the students to various theoretical issues related to an open economy. 	<p>Unit 2 : Inflation, Unemployment and Expectations</p>	<p>Remember, Understand</p>
				<p>Unit 3 : Open Economy Models</p>	<p>Remember, Understand</p>
7	3 rd	<p>ECO-HC-3036 Statistical Methods for Economics</p>	<ul style="list-style-type: none"> This is a course on statistical methods for economics. It begins with some basic concepts and terminology that are fundamental to statistical analysis and inference. It then develops the notion of probability, followed by probability distributions of discrete and continuous random variables and of joint distributions. This is followed by a discussion on sampling techniques used to collect survey data. The course introduces the notion of sampling distributions that act as a bridge between probability theory and statistical inference. The semester concludes with some topics in statistical inference that include point and interval estimation. 	<p>Unit 1 : Introduction and overview</p>	<p>Remember, Understand</p>
				<p>Unit 2 : Elementary probability Theory</p>	<p>Remember, Understand</p>
				<p>Unit 3 : Random Variables and Probability Distribution</p>	<p>Remember, Understand</p>
				<p>Unit 4: Random Sampling and Jointly Distributed random Variables</p>	<p>Remember, Understand</p>
				<p>Unit 5: Sampling</p>	<p>Remember, Understand</p>

8	4 th	ECO-HC-4016 Intermediate Microeconomics - II	<ul style="list-style-type: none"> Here the emphasis will be on giving conceptual clarity to the student coupled with the use of mathematical tools and reasoning. Moreover it covers general equilibrium and welfare, imperfect markets and topics under information economics 	Unit 1 : General Equilibrium, Efficiency and Welfare	Remember, Understand
				Unit 2 : Market Structure and Game Theory	Remember, Understand
				Unit 3 : Market with Asymmetric Information	Remember, Understand
9	4 th	ECO-HC-4026 Intermediate Macroeconomics - II	<ul style="list-style-type: none"> In this course, the students are introduced to the long run dynamic issues like growth and technical progress. It also provides the micro-foundations to the various aggregative concepts used in the previous course 	Unit 1 : Economics Growth	Remember, Understand
				Unit 2 : Microeconomics Foundations	Remember, Understand
				Unit 3 : Fiscal and Monetary policy	Remember, Understand
				Unit 4 : Schools of Macro - Economic thoughts	Remember, Understand
10	4 th	ECO-HC-4036 Introductory Econometrics	<ul style="list-style-type: none"> It covers statistical concepts of hypothesis testing, estimation and diagnostic testing of simple and multiple regression models. The course also covers the consequences of and tests for 	Unit 1 : Statistical Background	Remember, Understand
				Unit 2 : Simple linear regression model : Two – Variable case	Remember, Understand

			misspecification of regression models	Unit 3 : Multiple linear regression model	Remember, Understand
				Unit 4 : Violations of Classical Assumptions : Consequences, detection and remedies	Remember, Understand
				Unit 5 : Specification Analysis	Remember, Understand
11	5 th	ECO-HC-5016 Indian Economy – 1	<ul style="list-style-type: none"> Using appropriate analytical frameworks, this course reviews major trends in the economy and policy debates in India in the post-Independence period, with particular emphasis on paradigm shifts and turning points. Through this course students are able to understand about various economic indicators and even the comparison of such indicators at international level. Moreover, with this course students are able to understand the economy of India in a more illustrated way. 	Unit 1 : Economic development since independence	Remember, Understand
				Unit 2 : Population and Human Development	Remember, Understand
				Unit 3 : Growth and distribution	Remember, Understand
				Unit 4 : International Comparison	Remember, Understand
12	5 th	ECO-HC-5026		Unit 1: Conceptions of development empirics	Remember, Understand

		Development Economics-I	<ul style="list-style-type: none"> This is the first part of a two-part course on economic development. The course begins with a discussion of alternative conceptions of development and their justification. It then proceeds to aggregate models of growth and cross-national comparisons of the growth experience that can help evaluate these models. The axiomatic basis for inequality measurement is used to develop measures of inequality and connections between growth and inequality are explored. The course ends by linking political institutions to growth and inequality by discussing the role of the state in economic development and the informational and incentive problems that affect state governance. 		
				Unit 2: Growth models	Remember, Understand
				Unit 3: Poverty and inequality: definitions, measures and mechanisms	Remember, Understand
				Unit 4: Political institutions and the functioning of the state	Remember, Understand
13	5 th	ECO-HE-5026 Money and Financial Markets	<ul style="list-style-type: none"> This course exposes students to the theory and functioning of the monetary and financial sectors of the economy. It highlights the organization, structure and role of financial markets and institutions. 	Unit 1 : Money	Remember, Understand, Analyze and Apply
				Unit 2 : Financial institutions, Markets, Instruments and Financial Innovations	Remember, Understand, Analyze and Apply

			<ul style="list-style-type: none"> It also discusses interest rates, monetary management and instruments of monetary control. Financial and banking sector reforms and monetary policy with special reference to India are also covered. 	Unit 3 : Interest Rates	Remember, Understand, Analyze
				Unit 4 : Banking System	Remember, Understand, Analyze
				Unit 5 : Central banking and Monetary policy	Remember, Understand, Analyze
14	5 th	ECO-HE-5036 Public Finance	<ul style="list-style-type: none"> This course is a non-technical overview of government finances with special reference to India. The course does not require any prior knowledge of economics. It will look into the efficiency and equity aspects of taxation of the center, states and the local governments and the issues of fiscal federalism and decentralization in India. The course will be useful for students aiming towards careers in the government sector, policy analysis, business and journalism 	Unit 1 : Theory	Remember, Understand
				Unit 2 : Issues from Indian Public Finance	Remember, Understand
15	6 th	ECO-HC-6016 Indian Economy-II	<ul style="list-style-type: none"> This course examines sector-specific policies and their impact in shaping trends in key economic indicators in India. It highlights major policy debates 	Unit 1: Macroeconomic policies and their impact	Remember, Understand, Analyze
				Unit 2 : Policies and performance in Agriculture	Remember, Understand, Analyze

			and evaluates the Indian empirical evidence.	Unit 3: Policies and performance in Industry	Remember, Understand, Analyze
				Unit 4: Trends and performance in services	Remember, Understand, Analyze
16	6 th	ECO-HC-6026 Development Economics-II	<ul style="list-style-type: none"> This is the second module of the economic development sequence. It begins with basic demographic concepts and their evolution during the process of development. The structure of markets and contracts is linked to the particular problems of enforcement experienced in poor countries. The governance of communities and organizations is studied and this is then linked to questions of sustainable growth. The course ends with reflections on the role of globalization and increased international dependence on the process of development. 	Unit 1: Demography and Development	Remember, Understand, Analyze
				Unit 2: Land, Labor and Credit markets	Remember, Understand
				Unit 3: Individuals, communities and collective outcomes	Remember, Understand, Analyze
				Unit 4: Environment and sustainable development	Remember, Understand, Analyze, Apply
				Unit 5: Globalization	Remember, Understand
17	6 th	ECO-HE-6016 Environmental Economics	<ul style="list-style-type: none"> This course focuses on economic causes of environmental problems. In particular, economic principles are applied to environmental questions and 	Unit 1: Introduction	Remember, Understand
				Unit 2: The theory of externalities	Remember, Understand, Analyze

			<p>their management through various economic institutions, economic incentives and other instruments and policies.</p> <ul style="list-style-type: none"> Economic implications of environmental policy are also addressed as well as valuation of environmental quality, quantification of environmental damages, tools for evaluation of environmental projects such as cost-benefit analysis and environmental impact assessments. Selected topics on international environmental problems are also discussed. 	<p>Unit 3: The design and implementation of environmental policy</p>	<p>Remember, Understand, Analyze and Apply</p>
				<p>Unit 4: International environmental problems</p>	<p>Remember, Understand, Analyze</p>
				<p>Unit 5: Measuring the benefits of environmental improvements</p>	<p>Remember, Understand, analyze</p>
				<p>Unit 6: Sustainable development</p>	<p>Remember, Understand, Analyze, Apply</p>
18	6 th	<p>ECO-HE-6026 International Economics</p>	<ul style="list-style-type: none"> This course develops a systematic exposition of models that try to explain the composition, direction and consequences of international trade, and the determinants and effects of trade policy. It then builds on the models of open economy macroeconomics developed in courses 08 and 12, focusing on national policies as well as international monetary systems. It concludes with an analytical account of the causes and consequences of the rapid expansion of international 	<p>Unit 1 : Introduction</p>	<p>Remember, Understand</p>
				<p>Unit 2 : Theories of international trade</p>	<p>Remember, Understand, Analyze</p>
				<p>Unit 3 : Trade policy</p>	<p>Remember, Understand, Analyze</p>
				<p>Unit 4: International macroeconomic policy</p>	<p>Remember, Understand, Analyze</p>

			financial flows in recent years. Although the course is based on abstract theoretical models, students will also be exposed to real-world examples and case studies.		
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4. b) BA/BSc (Regular, Generic) Economics

19	1 st	ECO-HG-1016 ECO-RC-1016 Principles of Microeconomics	<ul style="list-style-type: none"> This course intends to expose the student to the basic principles in Microeconomic Theory and illustrate with applications. 	Unit 1: Introduction	Knowledge, understanding
				Unit 2: Consumer Theory	Knowledge, understanding
				Unit 3: Production and Costs	Knowledge, understanding
				Unit 4: Perfect Competition	Knowledge, understanding
20	2 nd	ECO-HG-2016 ECO-RC-2016: Principles of Microeconomics–II	<ul style="list-style-type: none"> This is a sequel to Fundamentals of Microeconomics covered in the first semester. 	Unit 1: Market Structures Theory of a Monopoly Firm, Imperfect Competition.	Knowledge, understanding
				Unit 2: Factor pricing	Knowledge, understanding
				Unit 3: Market Failure	Knowledge, understanding

21	3 rd	ECO-RC-3016 Principles of Macroeconomics–I	<ul style="list-style-type: none"> This course introduces students to the basic concepts in Macroeconomics. Macroeconomics deals with the aggregate economy. In this course the students are introduced to the definition, measurement of the macroeconomic variables like GDP, consumption, savings, investment and balance of payments. The course also discusses various theories of determining GDP in the short run. 	Unit 1: Introduction	Knowledge, understanding
				Unit 2: National Income Accounting	Knowledge, understanding
				Unit 3: Determination of GDP	Knowledge, understanding
				Unit 4: National Income Determination with Government Intervention and Foreign Trade	Knowledge, understanding
				Unit 5: Money in a Modern Economy	Knowledge, understanding
22	4 th	ECO-RC-4016 Principles of Macroeconomics–II	<ul style="list-style-type: none"> This is a sequel to Principles of Macroeconomics–I. It analyses various theories of determination of National Income in greater detail. It also introduces students to concept of inflation, its relationship with unemployment and some basic concepts in an open economy. 	Unit 1: IS-LM Analysis	Knowledge, understanding
				Unit 2: GDP and Price Level in Short Run and Long Run	Knowledge, understanding
				Unit 3: Inflation and Unemployment	Knowledge, understanding
				Unit 4: Balance of Payments and Exchange Rate	Knowledge, understanding

23	5 th	<p>ECO-RE-5016 ECO-RG-5016</p> <p>Economic Development and Policy in India–I</p>	<ul style="list-style-type: none"> This course reviews major trends in aggregate economic indicators in India and places these against the backdrop of major policy debates in India in the post-Independence period. 	Unit 1: Issues in Growth, Development and Sustainability	Knowledge, understanding
				Unit 2: Factors in Development	Knowledge, understanding
				Unit 3: Population and Economic Development Demographic trends; urbanisation.	Knowledge, understanding
				Unit 4; Employment: Occupational structure in the organised and the unorganised sectors; open-, under- and disguised unemployment (rural and urban); employment schemes and their impact	Knowledge, understanding
				Unit 5: Indian Development Experience: Critical evaluation of growth, inequality, poverty and competitiveness, pre and post reforms era; savings and investment; mobilisation of internal and external finance; monetary and fiscal policies; centre-state financial relations.	Knowledge, understanding

24	6 th	ECO-RE-6016 Economic Development and Policy in India–II	<ul style="list-style-type: none"> Building on the more aggregative analysis of trends in the Indian Economy offered in Economic Development and Policy–I, this course examines sector-specific trends in key indicators and their implications in the post-Independence period. 	Unit 1: Agriculture: Policies and Performance	Knowledge, understanding
				Unit 2: Industry: Policies and Performance	Knowledge, understanding
				Unit 3: Foreign Trade: Trends and Policies	Knowledge, understanding
25	3 rd	ECO-SE-3014 Data Collection and Presentation	<ul style="list-style-type: none"> This course help students in understanding use of data, presentation of data using software like MS-Excel. Students will be involved in preparation of questionnaires/schedules, collection of primary and secondary data and its presentation. Students will also be asked to prepare a report on collection of data and will be evaluated accordingly. 	Unit 1: Use of Data	Knowledge, understanding
				Unit 2: Questionnaire and Schedule	Knowledge, understanding, application, analysis
				Unit 3: Presentation of Data	Knowledge, understanding, application, analysis
26	4 th	ECO-SE-4014 Data Analysis	<ul style="list-style-type: none"> This course discusses how data can be summarized and analyzed for drawing statistical inferences. The students will be introduced to important sources that are available and will also be trained in the use of software like SPSS 	Unit 1: Data entry in software	Knowledge, understanding, application, analysis

			to analyze data		
27	5 th	ECO-SE-5014 Field Survey: Techniques and Application	<ul style="list-style-type: none"> This course intends to give the students the basic idea on the techniques of data collection from the field. It also involves them in applying the methods of data collection through field survey on relevant socio-economic topics. 	Unit 1: What is field survey? Need for field survey in socio-economic problem analysis	Knowledge, understanding, application, analysis
				Unit 2: Methods of collection of data using field survey	Knowledge, understanding, application, analysis
				Unit 3: Students are required to collect data from the field on any socio-economically relevant topic of their choice	Knowledge, understanding, application, analysis
28	6 th	ECO-SE-5014 Report Writing and Presentation	<ul style="list-style-type: none"> This course intends to make the students familiar with report writing techniques after collecting and analyzing data on a socio-economic topic. They are also expected to present the report for evaluation. 	Unit 1: Importance of writing a report	Knowledge, understanding, application, analysis
				Unit 2: Basic structure of a report	Knowledge, understanding, application, analysis
				Unit 3: Prepare and present a report on the socio-economic topic chosen for collecting data from field in their fifth semester Skill Enhancement course	Knowledge, understanding, application, analysis

5. a) BA/BSc (Honours) Geography

SL. NO.	SEMESTER	PAPER CODE & TITLE	COURSE OUTCOMES	UNIT/ CHAPTER	BLOOM'S TAXONOMY LEVEL
1	1 st	GGY -HC-1016 Geomorphology	<ul style="list-style-type: none"> • Understanding of principles and concepts in Geomorphology. • Enrichment of Knowledge of Glacial, Aeolian & Fluvial processes. • Besides application of geomorphic concept in the field & practical utility while carrying out geomorphic research. 	Nature, Scope and Significance	Understand, Remember
				Structure and characteristics of the earth's crust and interior	Understand, Remember
				Forces of landform development: Endogenetic forces (folding, faulting earthquakes and volcanoes) and exogenetic forces (weathering, erosion and mass wasting).	Understand, Remember
				Earth Movements: Continental Drift Theory, Isostasy, Mountain building: views of Holmes and Kober, Plate-tectonics.	Understand, Remember
				Concept of Cycle of Erosion: Davis and Penck, Landform development under Fluvial, Aeolian and	Understand, Remember

				Glacial conditions	
				Study of Topographical Maps: Topographical map content and numbering system, the general interpretation of toposheets in respect of physical characteristics.	Understand, Remember, Apply
				Profile Drawing (serial, superimposed, projected and composite	Understand, Remember, Apply
				Preparation of Slope Map / Relative Relief Map: Wentworth's method and Smith's method.	Understand, Remember, Apply
				Delineation of drainage basin and drainage network, construction of cross and long profiles, stream ordering by Horton and Strahler's method	Understand, Remember, Apply
				Interpretation of Geological map and Construction of cross – section (Two geological maps including one with	Understand, Remember, Apply

				interruptions) showing different sedimentary beds.	
2	1 st	GGY-HC-1026 Cartographic Techniques	<ul style="list-style-type: none"> • Understanding the principle of mapping and techniques as well as different utilities in specialized needs. • Knowledge of both quantitative & qualitative data presentation. • Understand the principles & methods of mapping 	Cartography–Meaning, Development (Traditional and Modern Cartography) and Importance of Cartography in Geography.	Understand, Apply
				Shape and size of the earth, Coordinate system (latitude and longitude)	Understand, Apply
				Maps: Types, scale and content, representation of point, line and area in maps	Understand, Apply
				Map Projections: Concept of Map Projection, Classification of Map Projections; Choice of map projection	Understand, Apply
				Thematic mapping: Concept and types	Understand, Remember

				Construction of graphical scale (linear, diagonal and comparative); conversion of map scale	Understand, Remember, Apply
				Construction of graticules of Zenithal Polar Gnomonic and Stereographic, Simple Conical with one standard parallel, Bonne's conical, Gall's Stereographic Cylindrical along with their properties, uses and limitations.	Understand, Remember, Apply
				Preparation of thematic maps (choropleth, Isopleth and pie diagram) for representing various physical geographic data.	Understand, Remember, Apply
3	2 nd	GGY-HC-2016 Human Geography	<ul style="list-style-type: none"> To enhance the students ability to understand the human society, human behavior in geographical perspectives. 	Defining the field of human geography: Meaning and Scope; Nature of human geography and its relation with other social sciences.	Understand, Remember

			<ul style="list-style-type: none"> Understand the natural environment and human interaction. 	Schools of human geography: Human Ecology, Landscape and Locational	Understand, Remember
				Paradigms of man-environment relationship study: Determinism, Possibilism, Neo-determinism, and Cultural Determinism	Understand, Remember
				Man and environment relationship: Impact of environment on man in different geographical conditions; Impact of man and its activities on environment in different parts of the world; Impact of Population growth on development and environmental degradations; House types in different environmental conditions.	Understand, Remember
				Man and culture: Ethnicity and Race; Global patterns of racial composition of population and associated	Understand, Remember

				<p>characteristics of major racial groups; Global patterns of religious and linguistic composition of population; Tribal people of India and their socio-economic characteristics.</p>	
				<p>Human Settlements: Rural and urban settlements - Origin, growth and morphological characteristics; Types/Patterns of rural settlements; Burgess and Hoyt theories of internal structure of town; patterns of urbanization: Global and Indian scenario.</p>	Understand, Remember
				<p>Traditional house types of selected ethnic groups of N.E. India and India</p>	Understand, Remember, Apply
				<p>Trend of population growth in the world in relation to five most populous countries of</p>	Understand, Remember, Apply

				the world using line graph.	
				Religious and Linguistic composition of population in the world and five most populous countries of the world using pie-graph.	Understand, Remember, Apply
				Spatial patterns of scheduled tribes population and urban population in India at state level Through choropleth map (based on percentage and LQ).	Understand, Remember, Apply
				Drawing of major rural settlement types/patterns; Morphological diagram of a village and a town (preferably based on student's own village and town); Drawing of internal model structure of towns according to Burgess and Hoyt.	Understand, Remember, Apply
				Mapping of distribution of major racial and linguistic groups of population in the	Understand, Remember, Apply

				world.	
4	2 nd	GGY-HC-2026 Climatology and Biogeography	Knowledge about different phenomena of Weather & Climate. Variation of monsoon & techniques of weather forecasting. Understanding of plant & animal association in varying habitats & environment	Meaning of climatology and its significance in geographical studies	Understand, Remember
				Atmospheric Composition and Structure; and their variation with altitude, latitude and season	Understand, Remember
				Insolation and Temperature; Factors and Distribution and Heat Budget	Understand, Remember, Analyse
				Atmospheric Pressure and Wind system; Planetary Winds, Forces affecting Winds, General Circulation, Jet Streams	Understand, Remember, Analyse
				Atmospheric Moisture – Evaporation, Humidity, Fog, Condensation, Precipitation Types, Stability and Instability.	Understand, Remember, Analyse
				Climatic classification of Koppen and Trewartha; Monsoon - Origin and	Understand, Remember

				Mechanism.	
				Cyclones and anticyclones; Tropical Cyclones, Extra- Tropical Cyclone	Understand, Remember
				Meaning, Scope and Significance of biogeography	Understand, Remember
				Ecology and Ecosystem, Structure and functioning of ecosystem	Understand, Remember
				Global distribution of major plants and animals	Understand, Remember
				Biomes and Biodiversity hotspots of the world	Understand, Remember
				Soil as a component of environment , soil formation process and factors , soil composition and horizon, Soil types and their distribution in India	Understand, Remember
				Interpretation of Indian Weather map for Monsoon and non- monsoon	Understand, Remember, Apply

				seasons/months Based on various weather symbols depicted on maps.	
				Preparation of weather reports of Indian subcontinent by analyzing the weather satellite images of at least three consecutive days (e.g. INSAT 3D, NOAA satellite)	Understand, Remember, Apply
				Preparation of rainfall-temperature graphs; hythergraph, climograph and ergograph taking data from India/N.E. India/Assam	Understand, Remember, Apply
				Calculation of average annual rainfall and variability of annual rainfall and preparation of rainfall distribution and variability maps (using isopleths)	Understand, Remember, Apply
				Mapping of protected areas (National park, biosphere reserve and wildlife sanctuary) of Assam/ N.E.	Understand, Remember, Apply

				India/India.	
				Mapping of phyto-geographic and zoogeographic regions of the world.	Understand, Remember, Apply
				Mapping of Biodiversity hotspots of the world.	Understand, Remember, Apply
				Mapping of Soil types of Assam/N.E. India and Soil horizons.	Understand, Remember, Apply
5	3 rd	GGY-HC-3016 Economic Geography	<ul style="list-style-type: none"> • Knowledge about location, distribution & organization of economic activities in different spatial scale, as well as understanding man's activities, productivity in different geographic situations. • Understanding different farming techniques & modernization of agriculture, along with the practical utility. 	Meaning, scope and approaches of Economic Geography	Understand, Remember
				Economic activity: meaning and classification; Production system: Role of land, labour And capital.	Understand, Remember
				Agriculture: Factors influencing agriculture; types of agriculture; Von Thunen's model of agricultural location; Factors influencing cultivation of wheat, rice, coffee and tea, and their	Understand, Remember

				distribution and production in different parts of the world.	
				Manufacturing: Factors influencing industrial location; Classification of industry; Weber's theory of industrial location; Factors, distribution and production of iron and steel, cotton Textile and IT industries in the world; Special economic zones and technology parks	Understand, Remember, Analyse
				Transport system: Modes of transport, factors influencing transport development and role of transport in resource mobilization and economic development.	Understand, Remember
				Trade: Factors influencing trade in different countries of the world; Trade relations of India with the countries like USA, Russia and Japan	Understand, Remember
				Trend of rice, wheat and iron & steel production in the world/USA/India since 1960 using moving average and	Understand, Remember, Apply

				least squares methods.	
				Trend of production of wheat, rice, maize and barley in the world/USA since 1960 using Band-graph.	Understand, Remember, Apply
				Trend of balance of trade relations (export and import value) of India with USA, China and Japan in respect of major commodities since 1990 using Bar-graph.	Understand, Remember, Apply
				Regional variation in fertilizer consumption and agricultural productivity in rice, wheat and Barley in selected countries of the world using Bar-graph.	Understand, Remember, Apply
				Inter-state/Inter-nation volume of movement of selected commodities and Inter-city Movement of traffic/bus in N.E. India through flow cartogram.	Understand, Remember, Apply

6	3 rd	GGY-HC-3026 Geography of India with Special Reference to N.E. India	<ul style="list-style-type: none"> • Development of a better spatial perspective of physical & socio cultural aspects of India & NE India. • These have both utilitarian & applied aspects in broader contexts. 	India's location and its significance; administrative divisions	Understand, Remember
				Physical setting: Physiographic divisions and their characteristics; Climate and its seasonal and regional characteristics; vegetation; soil types and its distribution	Understand, Remember
				Population: Trend of growth, spatial variation in growth and distribution; Age and sex composition; Linguistic and religious composition	Understand, Remember
				Agriculture: Regional distribution and production patterns of rice, wheat and millet	Understand, Remember
				Industry: Distribution and production patterns of iron and steel, cotton textile and fertilizers; Role of transport system in industrial development	Understand, Remember

				<p>North-East India: Land of seven sisters and its locational significance; physiographic framework; forest cover; agricultural practices including shifting cultivation; industrial development scenario; population growth, distribution and ethnic composition</p>	Understand, Remember
				<p>Trend of population growth and growth rates in India and N.E. India since 1901 using Census data (Source: census india.gov.in).</p>	Understand, Remember, Apply
				<p>Choropleth mapping to show spatial variation in decennial population growth rate in India.</p>	Understand, Remember, Apply
				<p>Spatial variation in the patterns of religious composition of population in India and Social Composition of population (SC, ST and General) in N.E. India using pie-graph</p>	Understand, Remember, Apply
				<p>Trend of food grains</p>	Understand, Remember,

				production (rice, wheat, maize, barley, jowar and bajra) in India since 1950-51 using band graph.	Apply
				Map showing distribution of major tribal groups in North-East India.	Understand, Remember, Apply
				Field Report: Preparation of field report based on field study of observational knowledge about the Geographical personality of any part of India/N.E. India under the guidance of teacher(s).	Understand, Remember, Apply Preparation of observational Field study report
7	3 rd	GGY-HC-3036 Quantitative Methods in Geography	<ul style="list-style-type: none"> Having detailed understanding of different statistical method used for analyzing different geographical data. 	Quantification and its significance in geographical study; advantages and limitations of quantitative methods in geography	Understand, Remember
				Geographical Data: Nature, types and sources; scale of measurement (nominal, ordinal, Interval and ratio)	Understand, Remember

				Measures of central tendency (mean, median and mode) and dispersion (range, quartile deviation, mean deviation, standard deviation and coefficient of variation) and their applications in geographical data analysis	Understand, Remember, Apply, Analyse
				Sampling techniques: meaning of sampling and its need; types of sampling (simple random And stratified random)	Understand, Remember, Apply, Analyse
				Time series analysis and its applications in geographical studies; Basic techniques of time series data analysis (semi-average, moving average and least squares)	Understand, Remember, Apply, Analyse
				Correlation and Regression Analysis: Meaning of correlation; Bi-variate coefficient of correlation (Spearman's rank correlation and Pearson's product-moment correlation); linear regression analysis; and their	Understand, Remember, Apply, Analyse

				applications in geographical data analysis	
				Tabulation/Grouping of geographical data for making frequency distribution table; Preparation of Histogram, Frequency Polygon and Frequency Curve	Understand, Remember, Apply
				Computation of mean, median and mode for ungrouped and grouped geographical data; Determination of median and mode using graphical methods;Determination of the Location of spatial mean centreof settlements (using centographic measure).	Understand, Remember, Apply
				Computation of the values of standard deviation and coefficient of variation of ungrouped and grouped data relating to some geographical phenomena (rainfall, landholding, income, production, etc) for comparison of	Understand, Remember, Apply

				distribution patterns.	
				Analysis of time series data of some geographical phenomena (rainfall, production, export value, import value, etc) using moving average and least squares methods.	Understand, Remember, Apply
				Computation of coefficient of correlation between two logically associated geographical phenomena using Spearman's rank correlation and Pearson's product-moment correlation formulae; Preparation of scatter diagram and fitting the line of linear regression of Y on X for any set of bi-variate data relating to meaningful geographical phenomena.	Understand, Remember, Apply
8	3 rd	GGY-SE-3024 Thematic Cartography	<ul style="list-style-type: none"> Develop the Skills of mapping techniques as well as different utilities in specialized needs. Understanding the principles of Aerial photography & Satellite imageries. 	Thematic cartography: meaning and importance	Understand, Remember
				Thematic Mapping: Principles and techniques of representation of physical and human geographic data (point,	Understand, Remember

			<ul style="list-style-type: none"> Knowledge of both quantitative & qualitative data presentation. 	line, polygon)	
				Concepts and principles of cartographic overlay and mapping	Understand, Remember
				Concept of base map; Types of thematic map; map reading; map design, layout and typography	Understand, Remember
				Techniques of interpretation of Topographical maps, satellite imageries and aerial photographs for thematic mapping	Understand, Remember
				Preparation of an administrative/physical map of India containing necessary map elements using appropriate typography.	Understand, Remember, Apply
				Preparation of thematic maps for representing human geographic data using choropleth, isopleth, dot, sphere and proportionate circle techniques.	Understand, Remember, Apply

				<p>Interpretation of topographical maps for preparation of thematic maps through overlay method (taking point, line and area layers) to show relationship between relief and agriculture; and relief, drainage and settlements.</p>	Understand, Remember, Apply
				<p>Locational accessibility mapping based on travel time through isochronic cartogram.</p>	Understand, Remember, Apply
				<p>Preparation of land use / land cover map through visual interpretation of satellite imagery using appropriate classification scheme.</p>	Understand, Remember, Apply
9	4 th	GGY-HC-4016 Environmental Geography and Disaster Management	<ul style="list-style-type: none"> • Better understanding of the surrounding environment. • Knowledge of different environmental issues from local to global perspectives. • Increasing awareness along with knowledge of ways to cope up to adversities and paving the ways to sustainable 	<p>Environmental Geography: Nature, Scope and Significance</p>	Understand, Remember
				<p>Human-Environment Relationships – Historical progression, Adaptation in different Biomes</p>	Understand, Remember
				<p>Major Global</p>	Understand, Remember,

			development.	Environmental Problems: Pollution, Deforestation, Desertification, Global Warming, and Bio- Depletion	Evaluate
				Meaning of Hazard, Disaster, Risk and Vulnerability; Types of hazard/disaster(Natural and Manmade)	Understand, Remember, Evaluate
				Disaster Management Cycle and Phases: Prevention, Preparedness, Response, Rehabilitation, Reconstruction and Mitigation	Understand, Analysis
				Major Hazards and Disasters, and their Management: Flood, Earthquake, Wildfire, and Chemical and Nuclear explosions	Understand, Remember, Evaluate
				National Environmental Policy and National Disaster Management Plan: Environmental Protection Act 1986 and Disaster	Understand, Remember

				Management Act 2005	
				Exploring satellite imageries and toposheets to observe bank line change of Brahmaputra river from any selected stretch in three different time periods and preparation of map there from. (Goalpara, Palashbari, Nimatighat, etc.)Satellite images: https://earthexplorer.usgs.gov/ Survey of India toposheets: https://soinakshe.uk.gov.in/mtr/	Understand,Remember, Apply
				Mapping of major wetlands in a district and computation of shape and size (area) based distribution.	Understand, Remember,Apply
				Preparation of a map of a nearby wetland and identify the changes in dimension, water leveland encroachment it faced during the last one decade. Present your data in tabular form along with the map (field-based).	Understand,Remember, Apply

				<p>Preparation of a long-term precipitation time series curve for any selected station of N.E. India using moving average method by downloading the annual rainfall data for any district/station of Assam for at least 30 years from the portal: https://www.indiawaterportal.org/met_data/ . Students can also explore the web portal https://mausam.imd.gov.in/ to get an idea of different types of weather data in Understand, Remember, Apply India and their historical and present distribution.</p>	Understand, Remember, Apply
				<p>Drawing of a diagram of disaster management cycle with reference to some disasters (flood and earthquake) in North-East India and to indicate the activities associated with each step.</p>	Understand, Remember, Apply
				<p>Drawing of a map of Assam showing the major fault lines thereon. Also to</p>	Understand, Remember, Apply

				plot at least 50 epicentres in last few years and to explain the areas of their concentration by taking the help of Bhookamp app.	
				Preparation of a disaster vulnerability map of Assam/ N.E. India based on data of natural disasters (Flood / earthquake / landslide/bank erosion) with respect to their occurrence and frequency in different areas.	Understand, Remember, Apply
10	4 th	GGY-HC-4026 Population and Settlement Geography	<ul style="list-style-type: none"> The course will enable the students to have better understanding the different environmental issues of different scale from regional to global. Knowledge about different arising problems, ways to diagnose the problems. Understanding settlement both rural & urban contexts, to prepare sustainable environment. 	Defining the field of population geography: nature and scope; Its relation with demography	Understand, Remember
				Sources, characteristics and problems of population data; Perspectives on Census of India publications – Primary Census Abstract, District Census Hand-Book, Sample Registration System, etc	Understand, Remember

				<p>Distribution and density of population: Factors influencing population distribution and density; global pattern of population distribution; population density regions in the world</p>	Understand, Remember
				<p>Population Growth: Trend of global population growth; components of population growth—fertility, mortality and migration; factors influencing fertility and mortality; push and pull factors of migration; spatial variations in population growth in the world</p>	Understand, Remember
				<p>Morphology of rural and urban settlements; Burgess theory of internal structure of a town</p>	Understand, Remember
				<p>Concept of settlement hierarchy, primate city and urban fringe; Christaller's Central Place Theory</p>	Understand, Remember

				<p>Trend of population growth in Assam/N.E. India/India through line graph; Calculation and graphical representation of trend of decadal and annual growth rates of population in Assam/N.E. India/India.</p>	<p>Understand, Remember, Apply</p>
				<p>Choropleth map to show spatial pattern of decadal variation in population growth in Assam/N.E. India/India.</p>	<p>Understand, Remember, Apply</p>
				<p>Choropleth map showing spatial pattern of population density in Assam/India.</p>	<p>Understand, Remember, Apply</p>
				<p>Calculation of distribution pattern of settlements in an area using Nearest Neighbor Analysis.</p>	<p>Understand, Remember, Apply</p>
				<p>Map showing spatial variation in social/religious/rural-urban composition of population in Assam/N.E.</p>	<p>Understand, Remember, Apply</p>

				India using pie-graph.	
				Choropleth map showing spatial pattern of level of urbanization in Assam/N.E. India.	Understand, Remember, Apply
				Map showing distribution of towns and their varied population size with spheres in Assam/N.E. India.	Understand, Remember, Apply
				Flow cartogram showing direction and volume of migration into Assam/N.E. India from different parts of India.	Understand, Remember, Apply
11	4 th	GGY-HC-4036 Remote Sensing, GIS and GPS	<ul style="list-style-type: none"> • Knowledge about the remote sensing process, the scientific and technical base. • Understanding how GIS / GPS works, compose, application in spatial analysis from theoretical perspectives. 	Remote Sensing: Definition and History of Development	Understand, Remember
				Principles of Remote Sensing System: Energy sources, EMR and its interaction with Atmosphere and Earth Features; Platform, Sensor and Resolutions; Aerial and Satellite Remote Sensing;	Understand, Remember, Analyse

				Fundamentals of Photogrammetry	
				Remote Sensing data products, sources and characteristics; Elements of Image Interpretation (Visual & Digital); Digital Image Processing: Image Enhancement and Classification (Supervised and Un-supervised)	Understand, Remember
				Application of Remote Sensing: Land, Vegetation and Water	Understand, Remember
				Geographical Information System (GIS): Definition, Development, Components, and Functions; Opensource GIS	Understand, Remember
				GIS Data Types & Structures: Spatial and Non-Spatial Data; Raster and Vector Data Structure, Database Management System (DBMS)	Understand, Remember

				Data Layer Extraction and Spatial Analysis: Buffer, proximity and overlay analysis	Understand, Remember
				Application of GIS in geographical studies (Land Suitability analysis, Network analysis, Flood damage estimation)	Understand, Remember
				Global Positioning System (GPS): Types, basic principles and functions; Different Navigational Systems	Understand, Remember
				Application of GPS in surveying and mapping	Understand, Remember
				Visual Interpretation of Aerial photograph and Satellite Imagery and preparation of thematic maps based on appropriate classification scheme.	Understand, Remember, Apply
				Analysis of aerial photographs and satellite image:	Understand, Remember, Apply

				<p>Determination of photo scale and object height from aerial photo (Using Stereoscope); Digital classification of satellite image: supervised and unsupervised.</p>	
				<p>Geo-referencing and Data layer creation: Map scanning, geometric correction, digitization of different layers using point, line and polygon, attribute data input and their thematic representation, Buffer creation, Overlay analysis.</p>	<p>Understand, Remember, Apply</p>
				<p>GPS data collection, plotting and mapping of various features within college campus.</p>	<p>Understand, Remember, Apply</p>
				<p>Basic Remote Sensing and GIS Software's for practical works: ArcGIS/Erdas Professional /Q-GIS/SAGA GIS.</p>	<p>Understand, Remember, Apply</p>

12	4 th	GGY-SE-4014 Advanced Statistical Techniques for Spatial Analysis	<ul style="list-style-type: none"> Having detailed understanding of advanced statistical method and used for analyzing different geographical data. 	Statistics and Geography: Role of statistics in geographical studies; Nature of geographical data and selection of statistical techniques for spatial analysis (Basic understanding)	Understand, Remember
				Application of the measures of central tendency (mean, median, mode and weighted mean) and dispersion (standard deviation, coefficient of variation, coefficient of skewness and standard distance) in geographical data analysis and spatial distribution pattern analysis.	Understand, Remember, Apply
				Application of probability distributions (Normal, poisson and binomial) in understanding various geographical phenomena; Characteristics / Properties of normal distribution	Understand, Remember

				<p>Meaning and importance of sampling in geographical studies; Types of sampling (probability and non-probability sampling) and their relative merits and demerits; Concept of large and small samples</p>	Understand, Remember
				<p>Correlation and regression analysis in geography: Rank correlation and product-moment correlation coefficient; Linear regression and regression residuals; Concept of multiple correlation and regression.</p>	Understand, Remember
				<p>Introduction to the concept and application of Location quotient; Disparity or Differential index; Nearest Neighbour Analysis; Data standardization through ranking method for computation of composite score.</p>	Understand, Remember, Apply

				Setting of hypothetical data of a geographical phenomenon for normal, positively skewed and negatively skewed distributions, calculation of mean, median, mode and coefficient of skewness, and representation of the positions of mean, median and mode in the respective frequency distribution curves.	Understand, Remember, Apply
				Graphical representation of median and mode for a given set of grouped data of a geographical attribute.	Understand, Remember, Apply
				Determination of the spatial mean centre(s) of population /urban population in Assam/ N.E. India.	Understand, Remember, Apply
				Computation of correlation coefficient (both rank and product-moment), fitting of regression line of Y on X and preparation of regression residual map for a set of meaningful bi-	Understand, Remember, Apply

				<p>variate geographical data of Assam/N.E. India/India.</p>	
				<p>Analysis of appropriate geographical data for computation/representation of LQ, gender disparity in literacy or work participation, and composite scores of socio-economic development (ranking technique). Statistical Software Package (SPSS, MS Excel, R, etc.) may also be used for practice.</p>	<p>Understand, Remember, Apply</p>
13	5 th	GGY-HC-5016 Social and Political Geography	<ul style="list-style-type: none"> Understanding different social & political components of a man-made environment. Knowledge about social components like language, religion, ethnicity & political components like boundaries, frontiers. 	<p>Social Geography: Meaning and scope; its approaches of study; and contemporary trend of its development</p>	<p>Understand, Remember</p>
				<p>Concept and types of social space and social groups</p>	<p>Understand, Remember</p>
				<p>Social Well-being: Concept and Component: Housing, Health and Education; Concept of Human</p>	<p>Understand, Remember</p>

				development and its measurements	
				Contribution of race, religion, language and ethnicity in promoting diversity in India	Understand, Remember
				Social Geographies of inclusion and exclusion: Caste system, slums, gated communities, communal conflicts and crime; Gender identity	Understand, Remember
				Political Geography: Nature, scope and recent trends; Approaches to its study	Understand, Remember
				Concept of state, nation, and nation-state; Attributes of State	Understand, Remember
				Concept of Geopolitics, Heartland and Rimland; Mackinder's Heartland Theory	Understand, Remember

				Concept of colonialism, neo colonialism and lebensraum	Understand, Remember
				Mapping the spatial patterns of human development in India and Assam using HDI.	Understand, Remember, Apply
				Construction of Ternary Diagram representing social composition of population in India/North East India.	Understand, Remember, Apply
				Level of Social well-being with the help of composite Z-score in India /North- East India.	Understand, Remember, Apply
				Sex disparity in literacy in India/North- East India using Sopher's Disparity Index.	Understand, Remember, Apply
				Computation of Shape Index for selected states of India and countries.	Understand, Remember, Apply
				Construction of a map of	Understand, Remember,

				India/North- East India highlighting the major inter- state boundary conflict zones.	Apply
				Reorganization of the states of North-East India during Pre and Post Independence periods (up to the present).	Understand, Remember, Apply
14	5 th	GGY-HC-5026 Field Techniques in Geography	<ul style="list-style-type: none"> To enhance students basic research ability & different techniques used for field survey. 	Geography and Field Studies: Geography as a field science; Need of field work in geography; Nature of field studies in physical geography and human geography	Understand, Remember
				Concept of Case Study and Its identification in the varying geographical contexts (Physical/Human/Rural/Urban/Environmental)	Understand, Remember
				Tools and Techniques in Field Studies: Nature of data and their collection techniques relating to various geographical phenomena (Physical and Human); Structure of field	Understand, Remember, Evaluate, Create

				<p>survey questionnaire; Collection of Physical geographic data: Observations and photography, field interview, questionnaire survey, Equipment/ Measurement-based survey, etc; Collection of Human geographic data: Questionnaire survey, Participant observation, PRA, Focus group interview /discussion, etc.</p>	
				<p>Surveying: Concept of ground surveying and mapping; Conduct of traverse surveying with Prismatic Compass; Profile levelling and contouring with Dumpy Level; Point distribution survey with GPS; Field mapping of Village, River bank, Wetland, Landslides, Market, etc through Transect, Quadrant and sketch map.</p>	Understand, Remember
				<p>Preparation of Field Study Report and its broad design: Basis of</p>	Understand, Remember, Apply

				selection of the theme of field study; Objectives, Methods of data collection, Location/Situation of the study area, Data Analysis and mapping, Interpretation/Findings	
				Field Book Preparation and Evaluation	Understand, Remember
				Field observations of a near-by area and preparation of a brief report , about the prevailing physical and human landscape of the area along with its spot photograph	Understand, Remember, Apply
				Preparation of two field survey questionnaire /schedule for collection of data relating to two different broad phenomena/problems (one on physical phenomenon and another on human phenomenon), and processing, tabulation and graphical representation of the same	Understand, Remember, Apply
				Closed traverse	Understand, Remember,

				<p>surveying within College campus with Prismatic Compass and plotting of some details within the polygon, and preparation of a plan with appropriate scale and error correction, if any</p>	Apply
				<p>Longitudinal profile levelling and contouring in College campus and any nearby area with Dumpy Level, and plotting of collected data in the forms of longitudinal profile and contour map.</p>	Understand, Remember, Apply
				<p>Collection of point data from an area with handheld GPS and preparation of a GPS data table and distribution map with down-loaded data</p>	Understand, Remember, Apply
				<p>Preparation of field map of a village, urban locality/market, river bank/wetland and its adjoining area or their any section through Transect, Quadrant and sketch map along with a spot</p>	Understand, Remember, Apply

				photograph of the same	
				<p>Field Book Preparation: Field observations of anear-by area and preparation of a brief report about the prevailing physical and human landscape of the area along with its spot photograph.</p>	Understand, Remember, Apply
				Preparation of two field survey questionnaire/schedule for collection of data relating to two different broad phenomena/problems (one on physical phenomenon and another on human phenomenon), and processing, tabulation and graphical representation of the same.	Understand, Remember, Apply
				Closed traverse surveying within College campus with Prismatic Compass and plotting of some details within the polygon, and preparation of a plan with	Understand, Remember, Apply

				appropriate scale and error correction, if any.	
				Longitudinal profile levelling and contouring in College campus and any nearby area with Dumpy Level, and plotting of collected data in the forms of longitudinal profile and contour map.	Understand, Remember, Apply
				Collection of point data from an area with handheld GPS and preparation of a GPS data table and distribution map with down-loaded data.	Understand, Remember, Apply
				Preparation of field map of a village, urban locality/market, river bank/wetland and its adjoining area or their any section through Transect, Quadrant and sketch map along with a spot photograph of the same.	Understand, Remember, Apply
15	5 th	GGY-HE-5026 Regional Development and	<ul style="list-style-type: none"> Understanding different regional components, regional development, approaches & 	Region: Concept, types and delineation techniques of a region.	Understand, Remember

		Planning	<p>technique induced.</p> <ul style="list-style-type: none"> Knowledge about need of conservation & management of resources for regional development. 	<p>Regional planning: Evolution and types; Objectives and principles of Regional Planning.</p>	Understand, Remember
				<p>Regional Planning in India: Macro, meso and micro level planning; Local level planning and Panchayati Raj (GDP); Participatory approach in planning; NITI Aayog.</p>	Understand, Remember
				<p>Planning regions of India with special reference to North-East India.</p>	Understand, Remember
				<p>Concept of Development: Growth versus development; Concept of sustainable development and balanced development.</p>	Understand, Remember
				<p>Regional Development theories and models: Concept and basic ideas of Growth Pole</p>	Understand, Remember

				Model of Perroux; Cumulative Causation Theory of Myrdaland Stages of Economic Growth model of Rostow.	
				Human development: Meaning and concept of Human Development Index; Concept of Happiness Index.	Understand, Remember, Apply
				Disparity of Regional Development in India: Development indicators; Measuring level of development; Pattern of regional development in India with special reference to North- East India; Role of NEC and DoNER Ministry towards development of the NE Region.	Understand, Remember
				Delineation of agricultural productivity regions in Assam/NE India by using weighted index number and	Understand, Remember, Apply

				Bhatia's method.	
				Delineation of influence zones of selected urban centres of Assam/ NE India by using Reilly's Breaking Point formula.	Understand, Remember, Apply
				Preparation of land use maps of any suitable area for two different points of time for identifying the changes in settlement, agriculture land, forest cover, water bodies, etc. during the period; and representation of data generated from there in a graph.	Understand, Remember, Apply
				Preparation of a choropleth map to show regional disparity in development in India And N. E. India based on selected indicators using Ranking Method and Composite Z-Score method.	Understand, Remember, Apply
				Preparation of flow cartogram to show volume of inter-state movement of different	Understand, Remember, Apply

				commodities in India/NE India.	
16	5 th	GGY-HE-5046 Agricultural Geography	<ul style="list-style-type: none"> Understand the basic agricultural pattern in local, regional & global contexts. The students will be able to know the problems & prospects of agriculture at different geographical scale. 	Agricultural Geography: Meaning and Scope, Significance; Its approaches of study	Understand, Remember
				Factors influencing agriculture: Physical, Socio-economic, Infra-structural and Institutional.	Understand, Remember
				Agricultural Systems and Types: Global Agricultural Systems; Agricultural types: Intensive and Extensive, Subsistence and Commercial, Plantation Farming, Mixed Farming, Horticulture and Market Gardening	Understand, Remember
				Von Thunen's Model of Agricultural Location; Concept of Land Rent and	Understand, Remember

				Market forces	
				Concept of cropping patterns: Crop Combination(Nelson's Method), Crop concentration, Intensityof cropping and Crop rotation	Understand,Remember
				Agricultural Modernization and Development: Concept of agricultural modernization; Inputs of agricultural modernization (mechanization, Irrigation, HYV seeds, fertilizers etc.); Concept of crop productivity and agricultural development	Understand,Remember
				Factors, distribution and production patterns of rice, wheat and sugarcane in the world	Understand,Remember
				India's agriculture: Major characteristics and problems; Green revolution; agro climatic regions	Understand,Remember

				Trend of production of major food grains (rice, wheat, maize etc.) in India/ selected States using moving average method.	Understand,Remember, Apply
				Preparation of the crop-combination Map of Assam/ North East India based on Nelson's method.	Understand,Remember, Apply
				Agricultural productivity pattern in Brahmaputra Valley/Assam/ N E India based on Kendall's Ranking Method.	Understand,Remember, Apply
				Mapping of spatial pattern of Intensity of Cropping in Assam/ North East India	Understand,Remember, Apply
				Spatial variation in land use pattern in Brahmaputra valley/ North East India with Pie diagram.	Understand,Remember, Apply

				<p>Spatial pattern of crop concentration in North East India/ Assam using Location Quotient Method.</p>	<p>Understand, Remember, Apply</p>
				<p>Spatial pattern of level of agricultural development in Assam/ N E India using Composite Z-Score.</p>	<p>Understand, Remember, Apply</p>
				<p>Correlation and regression analysis between irrigation and cropping intensity in Assam/N.E. India.</p>	<p>Understand, Remember, Apply</p>
17	6 th	GGY-HC-6016 Geographical Thought	<ul style="list-style-type: none"> • Develop a comprehensive understanding of the subject. • Apply the contemporary & historical perspective to explain the approach into the real world geographic problem. 	<p>Early development of Geography: Ancient, dark age, medieval, and age of exploration and discoveries</p>	<p>Understand, Remember</p>
				<p>Foundation of modern geography: Contribution of the German, French, British and American geographers</p>	<p>Understand, Remember</p>
				<p>Evolution of geographical thought: Determinism, possibilism, neo-determinism, human</p>	<p>Understand, Remember</p>

				ecology, cultural landscape and areal differentiation	
				Recent trends in geography: Quantitative revolution and its impact, logical positivism, locational school of thought, behaviouralism, humanistic geography and post-modernism.	Understand, Remember
				Geographical debates: Regional and systematic; ideographic and nomothetic	Understand, Remember
				Models in geography: Meaning, types and significance; basic concepts of Gravity Model, Spatial Diffusion Model and Distance Decay Model	Understand, Remember
				Mapping of routes of exploration and discoveries (Marco Polo, Christopher Columbus, Vasco-da-gama, and James Cook)	Understand, Remember, Apply

				Intensity of spatial interaction of Guwahati city with neighbouring urban centres.	Understand, Remember, Apply
				Mapping of population potential surfaces in Assam using the gravity model.	Understand, Remember, Apply
				Demarcation of urban influence zone by using Reilly's breaking point formula.	Understand, Remember, Apply
				Population Density gradient analysis of Guwahati or any other city.	Understand, Remember, Apply
				Trend of development of paradigms in geography (from Environmental Determinism to Post Modernism) through time-scale graph indicating advocates, tentative time of emergence and overriding theme.	Understand, Remember, Apply

				Preparation of a world map highlighting the major developments of geography (Greek, Arab, France, Germany, Russia, UK and USA) indicating the contribution, name of the contributor and year of contribution.	Understand, Remember, Apply
				Greek and Arabian contributions to the development of Geography in different ages (Name of contributor and name of contribution at different points of time) through time-scale graph.	Understand, Remember, Apply
18	6 th	GGY-HC-6026 Research Methods in Geography and Project Work	<ul style="list-style-type: none"> This course will help students how to proceed with research problem & the steps one should adopt & the tools and craft a geographer usually applies. 	Meaning and significance of research; types of research; Basics of research methodology; Review of literature and its need; Ethics of research	Understand, Remember
				Geographic Research: Meaning and Characteristics;	Understand, Remember

				Formulation of research problem	
				Research Design: Statement of the problem, Review of research works, Objectives, Research questions, Hypotheses, Database and methodology, Significance, Organization of the Work and Referencing	Understand, Remember
				Data Collection: Types and Sources of Data; Methods of primary data collection (both qualitative and quantitative, and physical and human geographic data); Concept of sample survey; Pilot survey; Data processing (Manual and computerised)	Understand, Remember, Apply, Evaluation
				Statistical Analysis of Data: Qualitative data analysis; Quantitative data analysis; Data representation (Manual and computerised)	Understand, Remember

				<p>Structure of a Research Report: Preliminaries; Text; Tables, Figures and Appendices; Citations, References and Bibliography; Research/Project Report Writing; Executive Summary</p>	Understand, Remember
				<p>Project Report Preparation and Evaluation:</p> <p>Each student will have to prepare a Project Report on a suitable geographical problem under the guidance of respective teacher following appropriate methodology, data base and literature review.</p>	Understand, Remember & Preparation of field study report
19	6 th	GGY-HE-6016 Geography of Health	<ul style="list-style-type: none"> • It provides the scope to develop a better understanding of different aspects of health. • Increasing awareness towards diseases & healthcare facilities required for better HDI. 	Geography of Health: Definition and significance; approaches of study: ecological, social and spatial; dualism between medical geography and geography of health.	Understand, Remember

				<p>Disease ecology: ecology and human health; geographical factors affecting human health; factors influencing disease transmission (pathological, physical, environmental, social, cultural and economic); Diffusion of diseases and their causes in varied biotic, physical and cultural environments.</p>	Understand, Remember
				<p>Classification of diseases: genetic, zoonotic, communicable, non-communicable, occupational, deficiency diseases and malnutrition.</p>	Understand, Remember
				<p>Disease occurrence: emergence, re-emergence and persistence; modes of transmission of major diseases (Malaria, Japanese encephalitis,</p>	Understand, Remember, Evaluate

				tuberculosis, hepatitis, AIDS and COVID-19) and their broad global distribution.	
				Healthcare systems: Meaning and components; Universal government-funded health system; Role of WHO and UNICEF in global health care; SDG3 for good health and Well-being; Healthcare services in India: family welfare, immunization, National Health Mission and its programmes, health for all programmes, challenges to health care system during pandemic situation like COVID-19.	Understand, Remember
				Environment, human habit and health: Basic concept and ideas relating to food habit and health, occupation and health, environmental degradation and health, lifestyle and human health.	Understand, Remember

				Mapping of health status indicators (hospital beds, primary health centres, doctors, para- medics, etc.) in Assam/N.E. India using Z-score method.	Understand, Remember, Apply
				Trend of infant mortality and maternal mortality rates in India in relation to selected developed and developing countries using line graph.	Understand, Remember, Apply
				Choropleth mapping of infant mortality in India at state level.	Understand, Remember, Apply
				Correlation analysis between any physical determinants (monthly rainfall/monthly average temperature) and epidemiological incidence of a disease (monthly malaria cases) in any district of Assam.	Understand, Remember, Apply
				Map showing spatial variation of disease incidence rate in	Understand, Remember, Apply

				India/N.E. India at state level.	
				Mapping of seasonal variation in the occurrence of Covid-19 cases in Assam at district level using pie graph.	Understand, Remember, Apply
				Preparation of questionnaire for healthcare and health status survey.	Understand, Remember, Apply
				Computation of distribution pattern of hospitals, health centres, etc. using nearest neighbour analysis.	Understand, Remember, Apply
20	6 th	GGY-HE-6036 Geography of Tourism	<ul style="list-style-type: none"> To understand the importance of tourism for development. Development of better spatial perspective of tourism industry at different geographical scale. 	Geography of Tourism: Nature and scope; Concepts and Issues of tourism; Recreation and leisure inter-relations; Robinson's geographical parameters of tourism.	Understand, Remember
				Factors and types of tourism: Nature tourism, Cultural tourism, Medical tourism, Agri-tourism, Adventure tourism,	Understand, Remember

				Pilgrimage, etc.	
				Recent trends in tourism: International and Domestic (India); Eco-Tourism; Sustainable tourism; Meetings, Incentives, Conventions and Exhibitions (MICE)	Understand, Remember
				Impact of tourism on economy, environment and society.	Understand, Remember
				Tourism development in India: Tourism infrastructures; Case studies of tourism development in Himalaya, Desert, Coastal Areas and North-East India with special reference to Assam; National Tourism Policies and prospects.	Understand, Remember
				Trend of growth of tourist arrivals in the World/India/Assam since 1960 using Moving average method and least	Understand, Remember, Apply

				squares method.	
				Trend of tourist arrivals in the north-eastern states of India and a few top-ranking tourist arriving states of India since 1980 using Band-graph.	Understand, Remember, Apply
				3.Line Graph showing pattern of tourist arrival(Domestic and International) in relation to rainfall and temperature in a year for selected tourist spots of North-East India / Assam.	Understand, Remember, Apply
				Spatial Patterns of Seasonal variation (Spring, Summer, Autumn and Winter) in tourist arrival in capital cities of North-East Indian states using Pie diagram and Bar Diagram.	Understand, Remember, Apply
				Preparation of a transport connectivity (road, railway and air) map of Assam/North-East India for major tourist destinations.	Understand, Remember, Apply

				Preparation of a tourist map of North-East India showing locations of important National parks and wildlife sanctuaries from tourism potential perspectives (indicating the major highlights of the respective destinations including distance from Guwahati city within box)	Understand, Remember, Apply
				Preparation of a tourist guide map of North-East India showing location of major tourist destinations and road connectivity routes from Guwahati city.	Understand, Remember, Apply
				Mapping of trekking route in a hilly area suitable for adventure tourism using GPS (Field based).	Understand, Remember, Apply

5. b) BA/BSc (Regular, Generic) Geography

21	1 st	GGY -HG-1016 GGY -RC-1016 Physical Geography	<ul style="list-style-type: none"> • Understanding of principles and concepts in Geomorphology. • Enrichment of Knowledge of Glacial, Aeolian & Fluvial processes. • Besides application of geomorphic concept in the field & practical utility while carrying out geomorphic research. 	Physical Geography – Definition and Scope, Components of Earth System	Understand, Remember
				Atmosphere – Composition and the vertical structure, Heat Balance, Global Circulation Pattern, Monsoon, Koppen’s Climatic Classification	Understand, Remember
				Lithosphere–Internal Structure of Earth based on Seismic Evidence	Understand, Remember
				Endogenetic and Exogenetic processes, Works of River, Fluvial Cycle of Erosion – Davis	Understand, Remember
				Hydrosphere: hydrological cycle, ocean bottom relief features, oceanic deposits, tides and currents	Understand, Remember
				Relief representation from the topographical sheet (v-shaped valley, u-shaped	Understand, Remember, Apply

				valley, conical hill, cliff, uniform slope)	
				Profile Drawing (Serial and superimposed)	Understand, Remember, Apply
				Rainfall-Temperature Graph, Climograph and Hythergraph	Understand, Remember, Apply
				Hypsometric and bathymetric curve	Understand, Remember, Apply
22	2 nd	GGY-HG-2016 GGY-RC-2016 Human Geography	<ul style="list-style-type: none"> To enhance the students ability to understand the human society, human behavior in geographical perspectives. Understand the natural environment and human interaction. 	Field of human geography: meaning, scope and importance	Understand, Remember
				Concepts of man-environment relationship: Determinism and Possibilism	Understand, Remember
				Impact of environment on man; impact of man on environment; population growth and environmental changes; house types in different environmental conditions	Understand, Remember

				Global patterns of racial, religious and linguistic composition of population	Understand, Remember
				Origin, growth and characteristics of rural and urban settlements; Patterns of rural settlements; Patterns of urbanization in India and N.E. India	Understand, Remember
				Traditional house types of selected ethnic groups of N.E. India and India	Understand, Remember, Apply
				Trend of population growth in the world in relation to five most populous countries of the world using line graph.	Understand, Remember, Apply
				Religious composition of population in the world and three most populous countries of the world using pie-graph	Understand, Remember, Apply
				Spatial patterns of urban population in Assam and	Understand, Remember, Apply

				N.E. India at state level through choropleth map	
				Drawing of major rural settlement types/patterns; Morphological diagram of a village and a town (preferably based on student's own village and town)	Understand, Remember, Apply
23	3 rd	GGY-HG-3016 GGY-RC-3016 Economic Geography	<ul style="list-style-type: none"> • Knowledge about location, distribution & organization of economic activities in different spatial scale, as well as understanding man's activities, productivity in different geographic situations. • Understanding different farming techniques & modernization of agriculture, along with the practical utility. 	Meaning, scope of Economic Geography	Understand, Remember
				Economic activity: meaning and classification; Production system: Role of land, labour and capital; Resource: Concept and classification	Understand, Remember
				Agriculture: Factors influencing agriculture; types of agriculture; Factors influencing cultivation of wheat, rice and tea, and their distribution and production in the world	Understand, Remember
				Manufacturing: Factors influencing industrial	Understand, Remember,

				location; types of industry; Factors, distribution and production of iron and steel and cotton textile industry in the world	Analyse
				Transport system: Modes of transport, factors influencing transport development and role of transport in resource mobilization and industrial development	Understand, Remember
				Trade: Factors influencing trade; Trade relations of India with the countries like Bhutan, Nepal and Bangladesh	Understand, Remember
				Trend of rice, wheat and iron & steel production in the world/India since 1960 using moving average method	Understand, Remember, Apply
				Trend of production of wheat, rice, maize and barley in the world/India since 1960 using Band-graph	Understand, Remember, Apply

				<p>Trend of balance of trade relations (export and import value) of India with Bangladesh, Nepal and Bhutan in respect of major commodities since 1990 using Bar-graph</p>	Understand, Remember, Apply
				<p>Regional variation in fertilizer consumption and agricultural productivity in rice, wheat and barley in selected countries of the world using Bar-graph</p>	Understand, Remember, Apply
				<p>Inter-state and Inter-national volume of movement of selected commodities through flow cartogram</p>	Understand, Remember, Apply
24	3rd	GGY-SE-3024 Thematic Cartography	<ul style="list-style-type: none"> Develop the Skills of mapping techniques as well as different utilities in specialized needs. Understanding the principles of Aerial photography & Satellite imageries. 	<p>Thematic cartography: meaning and importance</p>	Understand, Remember
				<p>Thematic Mapping: Principles and techniques of representation of physical and human geographic data (point, line, polygon)</p>	Understand, Remember

			<ul style="list-style-type: none"> Knowledge of both quantitative & qualitative data presentation. 	Concepts and principles of cartographic overlay and mapping	Understand, Remember
				Concept of base map; Types of thematic map; map reading; map design, layout and typography	Understand, Remember
				Techniques of interpretation of Topographical maps, satellite imageries and aerial photographs for thematic mapping	Understand, Remember
				Preparation of an administrative/physical map of India containing necessary map elements using appropriate typography.	Understand, Remember, Apply
				Preparation of thematic maps for representing human geographic data using choropleth, isopleth, dot, sphere and proportionate circle techniques.	Understand, Remember, Apply

				<p>Interpretation of topographical maps for preparation of thematic maps through overlay method (taking point, line and area layers) to show relationship between relief and agriculture; and relief, drainage and settlements.</p>	Understand, Remember, Apply
				<p>Locational accessibility mapping based on travel time through isochronic cartogram.</p>	Understand, Remember, Apply
				<p>Preparation of land use / land cover map through visual interpretation of satellite imagery using appropriate classification scheme.</p>	Understand, Remember, Apply
25	4 th	GGY-HG-4016 GGY-RC-4016 Geography of India with Special Reference to N.E. India	<ul style="list-style-type: none"> • Development of a better spatial perspective of physical & socio cultural aspects of India & NE India. • These have both utilitarian & applied aspects in broader contexts. 	<p>India's location and its significance; administrative divisions</p>	Understand, Remember
				<p>Physical setting: Major Physiographic Regions and their Characteristics; Drainage</p>	Understand, Remember

				System (Himalayan and Peninsular)	
				Climate: Seasonal Weather Characteristics; Climatic Divisions; Indian Monsoon (mechanism and characteristics)	Understand, Remember
				Population Growth and distribution; Characteristics and Composition of population (rural-urban, age, sex, occupational, literacy and religious), Population Policies of India	Understand, Remember
				Agriculture: Environmental, Technological and Institutional Factors affecting Indian Agriculture; Distribution and Production of Rice, Wheat and Tea; Agro Climatic Zones; Food Security	Understand, Remember
				Distribution and characteristics/potential of Natural Resources: Soil, Vegetation, Water,	Understand, Remember

				Mineral Resources (Coal, Petroleum and Iron ore)	
				Factors influencing Industrial development in the country; Industrial Regions and their characteristics; Industrial Policies in India; Distribution and production patterns of iron and steel and cotton textile	Understand, Remember
				Trend of population growth and growth rates in India and N.E. India/Assam since 1901 using Census of India data (Source: censusindia.gov.in)	Understand, Remember, Apply
				Choropleth mapping to show spatial variation in decennial population growth rate in India /N E India/Assam	Understand, Remember, Apply
				Spatial variation in the patterns of religious composition of population in India and Social composition of population	Understand, Remember, Apply

				(SC, ST and General) in N.E. India using pie-graph	
				Trend of food grains production (rice, wheat, maize, barley, jowar and bajra) in India since 1950-51 using band-graph	Understand, Remember, Apply
				Map showing distribution of major tribal groups in North-East India	Understand, Remember, Apply
				Field Report: Preparation of field report based on field study through observational knowledge about the geographical personality of any part of India/N.E. India/Assam under the guidance of teacher(s)	Understand, Remember, Apply Preparation of observational Field study report
26	4 th	GGY-SE-4014 Advanced Statistical Techniques for Spatial Analysis	<ul style="list-style-type: none"> Having detailed understanding of advanced statistical method and used for analyzing different geographical data. 	Statistics and Geography: Role of statistics in geographical studies; Nature of geographical data and selection of statistical techniques for spatial analysis (Basic understanding)	Understand, Remember

				Application of the measures of central tendency (mean, median, mode and weighted mean) and dispersion (standard deviation, coefficient of variation, coefficient of skewness and standard distance) in geographical data analysis and spatial distribution pattern analysis.	Understand, Remember, Apply
				Application of probability distributions (Normal, poisson and binomial) in understanding various geographical phenomena; Characteristics / Properties of normal distribution	Understand, Remember
				Meaning and importance of sampling in geographical studies; Types of sampling (probability and non-probability sampling) and their relative merits and demerits; Concept of large and small samples	Understand, Remember
				Correlation and regression analysis in geography:	Understand, Remember

				Rank correlation and product-moment correlation coefficient; Linear regression and regression residuals; Concept of multiple correlation and regression.	
				Introduction to the concept and application of Location quotient; Disparity or Differential index; Nearest Neighbour Analysis; Data standardization through ranking method for computation of composite score.	Understand, Remember, Apply
				Setting of hypothetical data of a geographical phenomenon for normal, positively skewed and negatively skewed distributions, calculation of mean, median, mode and coefficient of skewness, and representation of the positions of mean, median and mode in the respective frequency distribution curves.	Understand, Remember, Apply

				Graphical representation of median and mode for a given set of grouped data of a geographical attribute.	Understand, Remember, Apply
				Determination of the spatial mean centre(s) of population /urban population in Assam/ N.E. India.	Understand, Remember, Apply
				Computation of correlation coefficient (both rank and product-moment), fitting of regression line of Y on X and preparation of regression residual map for a set of meaningful bi-variate geographical data of Assam/N.E. India/India.	Understand, Remember, Apply
				Analysis of appropriate geographical data for computation/representation of LQ, gender disparity in literacy or work participation, and composite scores of socio-economic development (ranking technique). Statistical	Understand, Remember, Apply

				Software Package (SPSS, MS Excel, R, etc.) may also be used for practice.	
27	5 th	GGY-RE-5016 Environmental Geography and Disaster Management	<ul style="list-style-type: none"> • Better understanding of the surrounding environment. • Knowledge of different environmental issues from local to global perspectives. • Increasing awareness along with knowledge of ways to cope up to adversities and paving the ways to sustainable development. 	Environmental Geography: Nature, Scope and Significance	Understand, Remember
				Human-Environment Relationships – Historical progression; Adaptation in different Biomes	Understand, Remember
				Major Global Environmental Problems: Pollution, Deforestation, Desertification, Global Warming and Bio-Depletion	Understand, Remember, Evaluate
				Meaning of Hazard, Disaster, Risk and Vulnerability; Types of hazard/disaster (Natural and Man-made)	Understand, Remember, Evaluate
				Disaster Management Cycle and Phases: Prevention, Preparedness, Response, Rehabilitation, Reconstruction and	Understand, Analysis

				Mitigation	
				Major Hazards and Disasters, and their Management: Flood, Earthquake, Wildfire, and Chemical and Nuclear explosions	Understand, Remember, Evaluate
				National Environmental Policy and National Disaster Management Plan: Environmental Protection Act 1986 and Disaster Management Act 2005	Understand, Remember
				Exploring satellite imageries and toposheets to observe bank line change of the Brahmaputra river from any selected stretch in three different time periods and preparation of map the reform (Goalpara, Palasbari, Nimatighat, etc.) Satellite images can be downloaded from https://earthexplorer.usgs.gov/ Survey of India toposheets can be downloaded freely from https://soinakshe.uk.gov.i	Understand, Remember, Apply

				n/mtr	
				Mapping of major wetlands in a district and computation of shape and size (area) for their classification	Understand, Remember, Apply
				Preparation of a map of a nearby wetland and to identify the changes in dimension, water level and encroachment it faced during the last one decade. Presentation of data in tabular form along with the map (field-based)	Understand, Remember, Apply
				Preparation of a long-term precipitation time series curve for any selected station of N.E. India using moving average method by downloading the annual rainfall data for any district/station of Assam for at least 30 years from the portal. https://www.indiawaterportal.org/met_data/ Students can also explore the web portal https://mausam.imd.gov.in/ to get an idea of	Understand, Remember, Apply

				different types of weather data in India and their historical and present distribution	
				Drawing of a diagram of disaster management cycle with reference to some disasters (flood and earthquake) in North-East India and to indicate the activities associated with each step	Understand, Remember, Apply
				Drawing of a map of Assam showing the major fault lines thereon. Also to plot at least 50 epicentres in last few years and to explain the areas of their concentration with the help of Bhookamp app	Understand, Remember, Apply
				Preparation of a disaster vulnerability map of Assam/ N.E. India based on data of natural disasters (Flood/earthquake/landslide/bank erosion) with respect to their occurrence and frequency in different	Understand, Remember, Apply

				areas	
28	5 th	GGY-GE-5016 Population and Settlement Geography	<ul style="list-style-type: none"> The course will enable the students to develop an understanding of the influence of population trends on the various aspects of human life – social, cultural, political and economic Understanding settlement both rural & urban contexts, to prepare sustainable environment 	Defining the field of population geography: meaning and scope; its relation with demography	Understand, Remember
				Sources of population data; Perspectives on Census of India publications – Primary Census Abstract, District Census Hand-Book, Sample Registration System, etc	Understand, Remember
				Distribution and density of population: Factors influencing population distribution and density; global pattern of population distribution	Understand, Remember
				Population Growth: Trend of global population growth; components of population growth – fertility, mortality and migration; push and pull factors of migration; spatial variations in population growth in the world	Understand, Remember

				Theories of population growth: Malthusian Theory and Demographic Transition Theory	Understand, Remember
				Population composition and associated characteristic patterns in global contexts: Age-Sex Composition; Rural-Urban Composition; Population ageing	Understand, Remember
				Defining the field of settlement of geography: Meaning and scope	Understand, Remember
				Rural and urban settlements: Factors influencing distribution pattern of settlements; Types of rural settlements; Morphology and Characteristics of rural and urban settlements	Understand, Remember
				Concept of settlement hierarchy and urban fringe; Christaller's Central Place Theory	Understand, Remember

				<p>Trend of population growth in Assam/N.E. India through line graph; Calculation and graphical representation of trend of decadal growth rates of population in Assam/N.E. India/India</p>	<p>Understand, Remember, Apply</p>
				<p>Choropleth map to show spatial pattern of decadal variation in population growth in Assam/N.E. India/India</p>	<p>Understand, Remember, Apply</p>
				<p>Choropleth map showing spatial pattern of population density in Assam/India</p>	<p>Understand, Remember, Apply</p>
				<p>Map showing spatial variation in social/religious/rural-urban composition of population in Assam/N.E. India using pie-graph</p>	<p>Understand, Remember, Apply</p>
				<p>Choropleth map showing spatial pattern of level of urbanization in Assam/N.E. India</p>	<p>Understand, Remember, Apply</p>

				Flow cartogram showing direction and volume of migration into Assam/N.E. India from different parts of India	Understand, Remember, Apply
				Map showing distribution of towns and their varied population size with spheres in Assam/N.E. India	Understand, Remember, Apply
29	5 th	GGY-SE-5024 Geography of Tourism	<ul style="list-style-type: none"> To understand the importance of tourism for development. Development of better spatial perspective of tourism industry at different geographical scale. 	Geography of Tourism: Nature and scope; Concepts and issues of tourism; Recreation and leisure inter-relations; Robinson's geographical parameters of tourism	Understand, Remember
				Factors and types of tourism: Nature tourism, Cultural tourism, Medical tourism, Adventure tourism, Pilgrimage, etc	Understand, Remember
				Recent Trends in tourism: International and Domestic (India); Eco-Tourism, Sustainable Tourism	Understand, Remember

				Impact of tourism on economy, environment and society	Understand, Remember
				Tourism development in India: Tourism infrastructures; Case studies of tourism development in Himalaya, Desert and North- East India with special reference to Assam; National tourism policies and prospects	Understand, Remember
				Trend of growth of tourist arrivals in the world/India/Assam since 1960 using Moving average method and least squares method	Understand, Remember
				Trend of tourist arrivals in the north-eastern states of India and few top ranking tourist arriving states of India since 1980 using Band-graph	Understand, Remember, Apply
				Line Graph showing pattern of tourist arrival (Domestic and	Understand, Remember, Apply

				International)in relation to rainfall and temperature in a year for selected tourist spots of North-East India / Assam	
				Spatial Patterns of Seasonal variation (Spring, Summer, Autumnand Winter) in tourist arrival in capital cities of North-East Indian States using Pie diagram and Bar Diagram	Understand,Remember, Apply
				Preparation of a transport connectivity (road, railway and air)map of Assam and North East India for major tourist destinations	Understand,Remember, Apply
				Preparation of a tourist map of North-East India showinglocations of important national parks and wildlife sanctuaries from tourism potential perspectives (indicating the major highlights of the respective destinations including distance from Guwahati city within box)	Understand,Remember, Apply

				Preparation of a tourist guide map of North-East India showing location of major tourist destinations and road connectivity routes from Guwahati city	Understand, Remember, Apply
30	6 th	GGY-RE-6016 Social and Political Geography	<ul style="list-style-type: none"> • Understanding different social & political components of a man-made environment. • Knowledge about social components like language, religion, ethnicity & political components like boundaries, frontiers. 	Social Geography: Meaning, Scope and approaches of study	Understand, Remember
				Concept and types of social space and social groups	Understand, Remember
				Social Well-being: Concept and components: Housing, health and education; Concept of human development and its measurements	Understand, Remember
				Contribution of race, religion, language and ethnicity in promoting diversity in India	Understand, Remember
				Social geographies of inclusion and exclusion: Basic concept and characteristics of caste	Understand, Remember

				system, slums, social crime and genderidentity	
				Political Geography: Nature, scope and approaches to its study	Understand, Remember
				Concept of state, nation, and nation-state; Attributes of state	Understand, Remember
				Concept of frontiers and boundaries; boundary problems withreference to India and North East India; Concept of buffer zones	Understand, Remember
				Concept of Geopolitics; Mackinder's Heartland Theory	Understand, Remember
				Mapping the patterns of human development in India and Assamusing HDI	Understand, Remember, Apply
				Construction of Ternary diagram representing social compositionof population in India /North- East India	Understand, Remember, Apply

				Construction of Ternary diagram representing social composition of population in India /North- East India	Understand, Remember, Apply
				Sex disparity in literacy in India /North-East India using a simple Index	Understand, Remember, Apply
				Computation of Shape Index for selected states and countries	Understand, Remember, Apply
				Construction of a map of India/North-East India highlighting the major inter-state boundary conflict zones	Understand, Remember, Apply
				Reorganization of states of North-East India during Pre and Post Independence periods (up to the present)	Understand, Remember, Apply
31	6 th	GGY-SE-6024 Environmental Impact	<ul style="list-style-type: none"> Understanding different components of natural & man-made environment. 	Nature and types of environmental impacts; Meaning, scope and nature of Environmental	Understand, Remember

		Assessment	<ul style="list-style-type: none"> Knowledge about environmental issues and to evaluate the adverse impact. Also to find out the possible remedial measures. 	Impact Assessment (EIA)	
				Origin and development of Environmental Impact Assessment; History of EIA in India; Current issues of environmental impact assessment	Understand, Remember
				Screening procedures: Scoping and environmental baseline assessment; Consideration of alternatives, baseline formulation and parameter identification, and impact identification	Understand, Remember
				Predicting Environmental Impacts and determining impact significance: Impact prediction, evaluation and mitigation	Understand, Remember
				Managing project impacts-post decision monitoring: Participation (public hearing), presentation and review, Monitoring and auditing of EIA	Understand, Remember

				<p>Legal, Policy and Regulatory framework of environmental impact assessment in India; ESPOO convention, General case studies of EIA (Wetlands in urban environment, highway Construction, brick kilns, big dam, etc.).</p>	Understand, Remember
				<p>Project Report Preparation and Evaluation:</p> <p>The students will visit a nearby industry/development project/road construction project/ecologically sensitive area to make assessment of nature and magnitude environmental impacts in the respective area under the guidance of teacher(s) concerned and to prepare an environmental impact analysis report thereof</p>	Understand, Remember & Preparation of field study report

6. a) BA (Honours) History

SL. NO.	SEMESTER	PAPER CODE & TITLE	COURSE OUTCOMES	UNIT/ CHAPTER	BLOOM'S TAXONOMY LEVEL
1	1 st	HIS-HC-1016 History of India I	<ul style="list-style-type: none"> After the completion of this paper, the students will be able to explore and effectively use historical tools in reconstructing the remote past of ancient Indian pre and proto history. The course will also train the students to analyse the various stages of evolution of human cultures and the belief systems in the proto-history period. 	Unit 1: Reconstructing Ancient Indian History	Remember, Understand, Analyze
				Unit 2: Pre-historic HunterGatherers	Remember, understand, Analyze,
				Unit 3: The Advent of Food Production	Remember, Understand, Analyze
				Unit 4: The Harappan Civilization	Remember, understand, Analyze, Evaluate
				Unit 5: Cultures in Transition	Remember, Understand, Analyze
2	1 st	HIS-HC-1026 Social Formations and Cultural Patterns of The Ancient World	<ul style="list-style-type: none"> After the completion of this paper, the students will be able to explain the processes and stages of the evolution of the variety of cultural pattern throughout antiquarian periods in History. They will be able to relate the connections between the various 	Unit 1: Evolution of Humankind	Remember, understand, Analyze
				Unit 2: Bronze Age Civilizations: economy, social stratification, state structure, religion	Remember, understand, Analyze

			Bronze Age civilizations in the ancient world as well as development of slave and polis societies in ancient Greece.	Unit 3: Nomadic groups in Central and West Asia	Remember, understand, Analyze
				Unit 4: Slave society in Ancient Greece:	Remember, understand, Analyze
				Unit 5: Polis in ancient Greece	Remember, understand, Analyze
3	2 nd	HIS-HC-2016 History of India-II	<ul style="list-style-type: none"> On successful completion of this course the students will be able to explain the economic and sociocultural connections, transitions and stratifications during the ruling houses, empires and the politics administrative nuances of early Indian History from 300 BCE to 300 CE. 	Unit 1: Economy and Society	Remember, Understand, Analyze
				Unit 2: Changing political formations	Remember, understand, Analyze,
				Unit 3: Towards early medieval India	Remember, Understand, Analyze
				Unit 4: Religion, philosophy and society	Remember, understand, Analyze, Evaluate
				Unit 5: Cultural developments	Remember, Understand, Analyze
4	2 nd	HIS-HC-2026 Social Formations and Cultural Patterns of The Medieval World	<ul style="list-style-type: none"> After the completion of this course, the students will be able to analyse and explain the historical sociopolitical, administrative and economic patterns of the medieval world. They will be able to describe the emergence, growth and decline 	Unit 1: Roman Republic: I	Remember, understand, Analyze
				Unit 2: Roman Republic: II	Remember, understand, Analyze
				Unit 3: Economic developments in Europe	Remember, understand, Analyze

			of various politico-administrative and economic patterns and the resultant changes therein.	from the 7th to the 14th centuries	
				Unit 4: Religion and culture in medieval Europe	Remember, understand, Analyze, Evaluate
				Unit 5: Societies in Central Islamic Lands	Remember, understand, Analyze
5	3 rd	HIS-HC-3016 History of India III (c. 750 - 1206)	<ul style="list-style-type: none"> The completion of this paper will enable the students to relate and explain the developments in India in its political and economic fields and its relation to the social and cultural patterns therein in the historical time period between c.700 to 1206. They will also be able to analyse India's interaction with another wave of foreign influence and the changes brought in its wake in the period. 	Unit 1: Studying Early Medieval India	Remember, understand, Analyze
				Unit 2: Political Structures	Remember, understand, Analyze, Evaluate
				Unit 3: Agrarian Structure and Social Change	Remember, understand, Analyze
				Unit 4: Trade and Commerce	Remember, understand, Analyze
				Unit 5: Religious and Cultural Developments	Remember, understand, Analyze
6	3 rd	HIS-HC-3026 Rise of The Modern West – I	<ul style="list-style-type: none"> On completion of this course, the students will be able to explain the major trends and developments in the Western world between the 14th to the 16th century CE. They will be able to explore and analyse the significant historical shifts and events and the 	Unit 1: Transition from Feudalism (to capitalism)	Remember, Understand, Analyze
				Unit 2: Geographical explorations and early colonial expansion	Remember, understand, Analyze, Evaluate

			resultant effects on the civilizations of Europe in the period.	Unit 3: Renaissance	Remember, Understand, Analyze, Evaluate
				Unit 4: Reformation in the 16th century: Origin and impact	Remember, understand, Analyze, Evaluate
				Unit 5: Economic developments of the sixteenth century	Remember, Understand, Analyze
7	3 rd	HIS-HC-3036 History of India IV (c.1206 - 1550)	<ul style="list-style-type: none"> After completion of this course students will be able to explain the political and administrative history of medieval period of India from 1206 to 1550 AD. They will also be able to analyse the sources of history, regional variations, social, cultural and economic set up of the period. 	Unit 1: Sources	Remember, understand, Analyze
				Unit 2: Polity	Remember, understand, Analyze
				Unit 3: Society and Economy	Remember, understand, Analyze
				Unit 4: Regional Polities	Remember, understand, Analyze, Evaluate
				Unit 5: Religion and Culture	Remember, understand, Analyze

8	4 th	HIS-HC-4016 Rise of The Modern West – II	<ul style="list-style-type: none"> After the completion of this course, the student will be able to explain the political and intellectual currents in Europe in the Modern Age. They will also be able to relate the circumstances and causal factors of the intellectual and revolutionary currents of both Europe and America at the beginning of the Modern age 	Unit 1: Europe in the 17th Century	Remember, understand, Analyze
				Unit 2: The English Revolution	Remember, understand, Analyze
				Unit 3: European Economy	Remember, understand, Analyze
				Unit 4: Politics in the 18th century	Remember, understand, Analyze, Evaluate
				Unit 5: Prelude to the Industrial Revolution	Remember, understand, Analyze
9	4 th	HIS-HC-4026 History of India V (c. 1550 - 1605)	<ul style="list-style-type: none"> At the completion of this course, the students will be able to analyse the circumstances and historical shifts and foundations of a variety of administrative and political setup in India between c.1550-1605. They will also be able to describe the inter relationships between the economy, culture and religious practices of the period. 	Unit 1: Sources and Historiography	Remember, Understand, Analyze
				Unit 2: Establishment of Mughal rule	Remember, understand, Analyze,
				Unit 3: Consolidation of Mughal rule under Akbar	Remember, Understand, Analyze, Evaluate
				Unit 4: Expansion and Integration	Remember, understand, Analyze, Evaluate

				Unit 5: Rural Society and Economy	Remember, Understand, Analyze
10	4 th	HIS-HC-4036 History of India VI (c. 1605 - 1750)	<ul style="list-style-type: none"> After the completion of this course, the students will be able to explain and reconstruct the linkages of the history of India under the Mughal Rule. As a whole, this course will enable them to relate to the socio-economic and religious orientation of the people of Medieval period in India. 	Unit 1: Political Culture under Jahangir and Shahjahan	Remember, understand, Analyze
				Unit 2: Mughal Empire under Aurangzeb	Remember, understand, Analyze
				Unit 3: Patterns of Regional Politics	Remember, understand, Analyze
				Unit 4: Trade and Commerce	Remember, understand, Analyze, Evaluate
				Unit 5: 18th century India	Remember, understand, Analyze
11	5 th	HIS-HC-5016 History of Modern Europe- I (c. 1780-1939)	<ul style="list-style-type: none"> After the completion of this course the students will be able to evaluate the historical evolution and political developments that occurred in Europe in the period between 1780 to 1939. They will also be also to critically analyse the evolution of social classes, nation states, 	Unit 1: The French Revolution and its European repercussions	Remember, understand, Analyze, Evaluate
				Unit 2: Restoration and Revolution: c. 1815 - 1848	Remember, understand, Analyze
				Unit 3: Capitalist Industrialization	Remember, understand, Analyze

			<p>evolution of capitalism and nationalist sentiment in Europe.</p> <ul style="list-style-type: none"> • They will also be able to relate to the variety of causes that dragged the world into devastating wars in the intervening period. 	Unit 4: Economic Transformation	Remember, understand, Analyze,
				Unit 5: Varieties of Nationalism and the Remaking of States in the 19th and 20th Centuries.	Remember, understand, Analyze
12	5 th	HIS-HC-5026 History of India VII (c. 1780 - 1857)	<ul style="list-style-type: none"> • After the completion of this course, the students will be able to relate the circumstances leading to the consolidation of colonial rule over India and their consequences. • They will also be able to explain the orientation of the indigenous population and the masses towards resistance to the colonial exploitation. • The course will also enable the students to analyse popular uprisings among the tribal, peasant and common people against the British policies. 	Unit 1: Expansion and Consolidation of colonial Power	Remember, Understand, Analyze, Evaluate
				Unit 2: Colonial State and Ideology	Remember, understand, Analyze,
				Unit 3: Rural Economy and Society	Remember, Understand, Analyze,
				Unit 4: Trade and Industry	Remember, understand, Analyze,
				Unit 5: Popular Resistance	Remember, Understand, Analyze, Evaluate

13	5 th	<p style="text-align: center;">HIS-HE-5016</p> <p>History of Assam Up to c. 1228</p>	<ul style="list-style-type: none"> • This paper will give a general outline of the history of Assam from the earliest times to the advent of the Ahoms in the 13th century. • Upon completion, students will be acquainted with major stages of developments in the political, social and cultural history of Assam during the early times. 	<p>Unit 1:</p> <p>[a] A brief survey of the sources: Literary, Archaeological</p> <p>[b] Land and people: Migration routes</p> <p>[c] Cultural linkages with South East Asia : the Stone Jars of Dima Hasao</p>	Remember, understand, Analyze	
					<p>Unit 3: Political dynasties:</p> <p>[a] Varmana ,</p> <p>[b] Salastambha</p> <p>[c] Pala</p>	Remember, understand, Analyze
					<p>Unit 4:</p> <p>[a] Political condition of Assam in the Post-Pala period.</p> <p>[b] Turko-Afghan invasions [c] Disintegration of the Kingdom of Kamarupa</p>	Remember, understand, Analyze

				<p>Unit 5:</p> <p>[a] Central and Provincial administration</p> <p>[b] Judicial administration</p> <p>[c] Revenue administration</p> <p>[d] Cultural Life : Literature, Art and architecture</p>	Remember, understand, Analyze, Evaluate
14	5 th	HIS-HE-5026 History of Assam (c. 1228-1826)	<ul style="list-style-type: none"> On completion of this paper, students will be able to identify major stages of developments in the political, social and cultural history of Assam during the medieval times. This paper will enable the student to explain the history of Assam from the 13th century to the occupation of Assam by the English East India Company in the first quarter of the 19th century. 	<p>Unit 1:</p> <p>[a] Sources-archaeological, epigraphic, literary, numismatic and accounts of the foreign travelers; <i>Buranjis</i></p> <p>[b] Political conditions of the Brahmaputra valley at the time of foundation of the Ahom kingdom.</p> <p>[c] Siu-ka-pha - An assessment [d] the Chutiya, Kachari and the Koch state</p>	Remember, Understand, Analyze
				<p>Unit 2:</p> <p>[a] Expansion of the Ahom Kingdom in the 16th</p>	Remember, understand, Analyze,

				<p>century: Suhungmung (Dihingiya Raja) [b] Political Developments in the 17th century</p>	Evaluate
				<p>Unit 3; [a] Assam in the second half of the 17th Century- the Ahom Mughal Wars –</p> <p>[b] Invasion of Ram Singha - the Battle of Saraighat (1671) and its results</p> <p>[c] Post-Saraighat Assam:</p>	Remember, Understand, Analyze
				<p>Unit 4:</p> <p>[a] Ahom Rule at its zenith</p> <p>[b] Decline and fall of the Ahom Kingdom</p> <p>[c] Burmese Invasions- The English East India Company in Assam Politics</p> <p>[d] Treaty of Yandaboo and Assam</p>	Remember, understand, Analyze, Evaluate
				Unit 5:	Remember, Understand, Analyze

				<p>[a] Ahom system of administration: the Paik system</p> <p>[b] Ahom Policy towards the neighbouring hill tribes</p> <p>[b] Religious life -- Sankaradeva and the Neo Vaishnavite Movement-</p> <p>[c] Cultural developments : Art, Architecture and literature.</p>	
15	6 th	HIS-HC-6016 History of India VIII (c. 1857 - 1950)	<ul style="list-style-type: none"> At the completion of this course, the learners will be able to analyse the course of British colonial exploitation, the social mobilizations during the period between c.1857 to 1950 and also the techniques of Indian resistance to British policies. It will also enable the students to explain the circumstances leading to decolonization and also the initial period of nation building in India. 	<p>Unit 1: Cultural changes and Socio-Religious Reform Movements</p>	Remember, Understand, Analyze
				<p>Unit 2: Nationalism: Trends up to 1919</p>	Remember, understand, Analyze,
				<p>Unit 3: Gandhian Nationalism after 1919: Ideas and Movements</p>	Remember, Understand, Analyze
				<p>Unit 4: Nationalism and Social Groups</p>	Remember, understand, Analyze, Evaluate

				Unit 5: Communalism and Partition	Remember, Understand, Analyze
16	6 th	HIS-HC-6026 History of Modern Europe II (c. 1780 -193)	<ul style="list-style-type: none"> After the completion of this course, the students will be able to analyse the historical developments in Europe between c.1780 to 1939. As the course structure of this paper focuses on the democratic and socialist foundations modern Europe, the students will be able to situate the historical development of working class movements, socialist upsurge and the economic forces of the two wars and the other ideological shifts of Europe in the period. 	Unit 1: Liberal Democracy, Working Class Movements and Socialism in the 19th and 20th Centuries	Remember, understand, Analyze
				Unit 2: The Crisis of Feudalism Socialism in Russia and Experiments in	Remember, understand, Analyze
				Unit 3: Imperialism, War, and Crisis: c. 1880 -1919	Remember, understand, Analyze, Evaluate
				Unit 4: The post 1919 World Order	Remember, understand, Analyze, Evaluate
				Unit 5: Cultural and Intellectual Developments since circa 1850	Remember, understand, Analyze
17	6 th	HIS-HE-6016 History of Assam (c. 1826 – 1947)	<ul style="list-style-type: none"> Upon completion of this course, students will be able to describe the period of British rule in Assam after its annexation by the imperialist forces. 	Unit 1: [a] Political condition in Assam on the eve of the British rule.	Remember, Understand, Analyze

			<ul style="list-style-type: none"> • They will also be able to situate the development of nationalism in Assam and its role in India's freedom struggle. • The course would enable the students to analyse the main currents of the political and socioeconomic developments in Assam during the colonial period. 	<p>[b] Establishment and Consolidation of the British rule Reforms and Reorganizations David Scott – Annexation of Lower Assam, Administrative</p> <p>[c] Reorganisation and Revenue Measures of Scott; Robertson</p>	
				<p>Unit 2:</p> <p>[a] Ahom Monarchy in Upper Assam (1833-38)</p> <p>[b] Annexation of Cachar</p> <p>[c] Early phase of Revolts and</p> <p>Resistance to British rule Gomdhar Konwar, Piyali Phukan, U.Tirut Singh,</p> <p>[d] The Khamti and the Singpho rebellion [e] The 1857 Revolt in Assam and its aftermath</p>	Remember, understand, Analyze,
				Unit 3:	Remember, Understand, Analyze

				<p>[a] Establishment of Chief Commissionership in Assam.</p> <p>[b] Land Revenue Measures and Peasant Uprisings in 19th century Assam</p> <p>[c] Growth of national consciousness</p> <p>[d] Government of India Act, 1919</p>	
				<p>Unit 4:</p> <p>[a] Non Co-operation Movement and Swarajist Politics in Assam</p> <p>[b] The Civil Disobedience Movement [c] Trade Union and Allied Movements</p> <p>[d] Tribal League and Politics in Assam</p>	<p>Remember, understand, Analyze,</p> <p>Evaluate</p>
				<p>Unit 5:</p> <p>[a] Quit India Movement in</p>	<p>Remember, Understand, Analyze</p>

				<p>Assam.</p> <p>[b] Cabinet Mission Plan and the Grouping Controversy</p> <p>[c] The Sylhet Referendum</p> <p>[d] Migration, Line System and its Impact on Politics in Assam</p>	
18	6 th	HIS-HE-6026 Assam Since Independence	<ul style="list-style-type: none"> Students will be able to assess the aftermath of Partition and other socio- economic developments in post-independence Assam upon completion of this course. They will also be able to identify the main currents of political and socio economic development in Assam after India's independence and the causes and impact of various struggles and movements in contemporary Assam. 	<p>Unit 1: Political developments</p> <p>Unit 2: Economic developments</p> <p>Unit 3: Movements and Ethnic Resurgence</p> <p>Unit 4: Environmental issues</p> <p>Unit 5: Cultural development</p>	<p>Remember, Understand, Analyze</p> <p>Remember, understand, Analyze,</p> <p>Remember, Understand, Analyze</p> <p>Remember, understand, Analyze, Evaluate</p> <p>Remember, Understand, Analyze</p>

6. b) BA (Regular, Generic) History

19	1 st	<p>HIS –HG-1016</p> <p>History of India (From The Earliest Times Upto c. 1206)</p>	<ul style="list-style-type: none"> • Upon completion of this course, students will be able to explain the emergence of state system in North India, development of imperial state structure and state formation in South India in the early period. • They will be able to understand the changes and transformations in polity, economy and society in early India and the linkages developed through contacts with the outside world. 	<p>Unit 1:</p> <p>[a] Sources : literary and archaeological</p> <p>[b] Indus Civilization :origin, extent, urban planning and urban decline.</p> <p>[c] Society, polity, economy and religion in the Rig Vedic Period</p> <p>[d] Society, polity, economy and religion in the Later Vedic Period</p>	Remember, Understand, Analyze
				<p>Unit 2:</p> <p>[a] Rise of territorial states– Janapadas and Mahajanapadas</p> <p>[b] Rise of new religious movements in north India- Jainism and Buddhism :social dimension of early Jainism and Buddhism.</p>	Remember, understand, Analyze, Evaluate

				<p>[c] The Mauryas - Background of Mauryan state formation.</p> <p>[d] Asoka :Dhamma - its propagation;</p> <p>[e] Decline of the Mauryas</p>	
				<p>Unit 3:</p> <p>[a] Post–Mauryan period : The Sungas, Chedis</p> <p>[b]Kharavelas and Satavahanas</p> <p>[c]Sangam Age: literature, society and culture in South India.</p>	Remember, Understand, Analyze
				<p>Unit 4:</p> <p>[a] Central Asian contact and its Impact: The Indo-Greeks, Sakas and Kushanas</p> <p>The Gupta Empire- state and administration</p> <p>[c] Post Gupta period :Vardhanas and Palas</p>	Remember, understand, Analyze, Evaluate

				<p>Unit 5:</p> <p>[a] Political development in the South – the Pallavas, the imperial Cholas, the Rashtrakutas and the Chalukyas.</p> <p>[b] The Arabs and the Turks in Indian politics – Ghaznavides and the Ghorid invasions.</p> <p>[c] Indian Society during 650 –1200 A.D.-literature & language, temple architecture and Sculpture.</p>	Remember, Understand, Analyze
20	2 nd	HIS-RC-2016 History of India (1206-1757)	<ul style="list-style-type: none"> • Upon completion of this course, students will be able to analyse the political and social developments in India between 1206-1757. • Students will be able to explain the formation of different States during this period along with their administrative apparatuses, and the society, economy and culture of India in the 13th to mid-18th century period. 	<p>Unit 1:</p> <p>[a] Foundation and consolidation of the Sultanate : Iltutmish, Sultana Raziya, Balban and the Mongol invasions</p> <p>[b] Expansion of Sultanate :Alauddin Khalji - conquests and administration</p> <p>[c]Tughlaqs- Muhammad bin Tughlaq and Firoz Shah Tughlaq.</p>	Remember, understand, Analyze, Evaluate

				<p>Unit 2:</p> <p>[a] Decline of the Sultanate</p> <p>[b] Rise of Provincial Kingdoms and contest for supremacy :Vijaynagar and Bahmani Kingdoms.</p> <p>[c] Political and Revenue administration : <i>Iqtadari</i> system [d] Agriculture, trade and commerce during the Sultanate period.</p>	Remember, understand, Analyze
				<p>Unit 3:</p> <p>[a] Foundation of the Mughal Empire : Mughal - Afghan contest - Babur and Humayun; Sher Shah and his administration.</p> <p>[b] Consolidation and territorial Expansion of the Mughal Empire- Akbar, Jahangir, Shahjahan, Aurangzeb.</p> <p>[c] Mughal-Rajput Relations.</p>	Remember, understand, Analyze

				[d] Religious Policy of the Mughals	
				Unit 4: [a] Rise of Maratha power under Shivaji. [b] Disintegration of the Mughal Empire [c] Mughal Administration : <i>mansabdari</i> and <i>jagirdari</i> System. [d] Aspects of society and economy during the Mughal period : agriculture, trade and commerce	Remember, understand, Analyze
				Unit 5: [a] Syncretism in medieval India: religion, literature, art and architecture [b] Bhakti movement : Nanak, Kabir and Mirabai [c] Sufism : Different <i>Silsilahs</i>	Remember, understand, Analyze

21	3 rd	<p style="text-align: center;">HIS –RC-3016</p> <p style="text-align: center;">History of India (c. 1757 to 1947)</p>	<ul style="list-style-type: none"> • Upon completion of this course, students will be able to understand the major factors that led to the establishment and consolidation of British rule in India. • They will also be able to identify the process of growth of resistance against British colonial rule and the eventual growth of Indian nationalist movement, which ultimately led to the end of the British rule in the country 	<p>Unit 1:</p> <p>[a] : Political condition in post-Mughal period and rise of regional powers : Bengal, Oudh and Hyderabad</p> <p>[b] : The Battle of Plassey and the Battle of Buxar - the establishment of the British rule in India.</p> <p>[c]: Robert Clive and his Dual Administration in Bengal.</p>	Remember, understand, Analyze
				<p>Unit 2:</p> <p>[a] : Expansion and Consolidation of the British rule under Warren Hastings and Lord Cornwallis.</p> <p>[b] British relations with the Marathas and Mysore.</p> <p>[c] Lord Wellesley and the Policy of Subsidiary Alliance.</p>	Remember, understand, Analyze, Evaluate

				[d] Lord Hastings and the relations with the Indian States.	
				<p>Unit 3:</p> <p>[a] Lord Bentinck and his reforms ; Raja Ram Mohan Roy and the growth of progressive ideas in India.</p> <p>[b] : The Growth and expansion of Sikh power under Ranjit Singh.</p> <p>[c] : Lord Dalhousie and his policy of expansion- the Doctrine of Lapse</p>	Remember, understand, Analyze
				<p>Unit 4:</p> <p>[a] The Revolt of 1857- its causes and consequences, the Government of India Act of 1858.</p> <p>[b] The British Economic policies in India – Land revenue systems - Permanent settlement, Ryotwari and Mahalwari; trade, commercialization of agriculture, the Drain Theory.</p>	Remember, understand, Analyze

				<p>[c] : The growth of national awakening in India and the establishment of the Indian National Congress.</p>	
				<p>Unit 5:</p> <p>[a] Lord Curzon and the Partition of Bengal – the Swadeshi Movement in India –growth of Revolutionary Terrorism.</p> <p>[b] Gandhi in Indian politics- the Khilafat and the Non Co-operation Movement, the Civil Disobedience Movement.</p> <p>[c] The growth of the Left, Muslim League and Communal politics in India.</p> <p>[d] The Quit India Movement – The INA and Partition of India.</p>	Remember, understand, Analyze
22	4 th	HIS –RC-4016 Social and Economic History of Assam	<ul style="list-style-type: none"> Upon completion of this course, students will be able to analyse and explain the socio-economic history of Assam including among others the development of caste system, religious beliefs, 	<p>Unit 1: Society and Economy in Early Assam</p>	Remember, Understand, Analyze
				<p>Unit 2: Society in Medieval Assam</p>	Remember, understand, Analyze, Evaluate

			<p>agriculture and land system, the social organization, trade and commerce, various agricultural regulations, plantation economy, development of modern industries, transport system, education, the emergence of middle class, development of literature and press, and growth of public associations.</p>	<p>Unit 3: Economy in Medieval Assam</p>	<p>Remember, Understand, Analyze</p>
				<p>Unit 4: Economy in Colonial Assam</p>	<p>Remember, understand, Analyze, Evaluate</p>
				<p>Unit 5: Society in Colonial Assam</p>	<p>Remember, Understand, Analyze</p>
23	5 th	<p>HIS –RE-5016 History of Assam (from earliest times to 1826)</p>	<ul style="list-style-type: none"> This paper will give a general outline of the history of Assam from the earliest times to the advent of the British. On completion of this paper, students will be able to identify major stages of developments in the political history of Assam from the earliest times to the occupation of Assam by the English East India Company in the first quarter of the 19th century 	<p>Unit 1:</p> <p>[a] A brief survey of the sources: literary, archaeological, epigraphic, literary, numismatic and accounts of the foreign travellers</p> <p>[b] Land and people: Migration routes</p> <p>[c] Cultural linkages with South East Asia: the Stone Jars of Dima Hasao</p>	<p>Remember, understand, Analyze, Evaluate</p>
				<p>Unit 2:</p> <p>[a] Origin and antiquity of Pragjyotisha or Kamrupa society</p>	<p>Remember, understand, Analyze</p>

				<p>[b] Political dynasties: Varmana; Salastambha; Pala</p> <p>[c] Administration: Central and Provincial; Judicial; Revenue</p>	
				<p>Unit 3:</p> <p>[a] Political condition of Assam in the Post-Pala period.</p> <p>[b] Turko-Afghan invasions</p> <p>[c] Disintegration of the Kingdom of Kamarupa</p> <p>[d] State formation in the Brahmaputra valley-the Chutiya, Kachari and the Koch state</p> <p>[e] Political conditions of the Brahmaputra valley at the time of foundation of the Ahom kingdom.</p>	Remember, understand, Analyze
				<p>Unit 4:</p> <p>[a] Important Ahom Rulers: Siukapha, Suhungmung, Pratap</p>	Remember, understand, Analyze

				<p>Singha, Gadadhar Singha, Rudra Singha, Rajeswar Singha</p> <p>[b] Ahom-Mughal wars Battle of Saraighat (1671)</p> <p>[c] Ahom system of administration: the Paik system</p> <p>[d] Ahom Policy towards the neighbouring hill tribes</p>	
				<p>Unit 5:</p> <p>[a] Decline and fall of the Ahom Kingdom: the Moamariya Rebellion; Burmese Invasions</p> <p>[b] The English East India Company in Assam Politics; Treaty of Yandaboo and Assam</p>	Remember, understand, Analyze
24	6 th	HIS –RE-6016 History of Assam (c. 1826 – 1947)	<ul style="list-style-type: none"> • Upon completion of this course, students will be able to describe the period of British rule in Assam after its annexation by the imperialist forces. • They will also be able to situate the development of nationalism 	<p>Unit 1:</p> <p>[a] Political condition in Assam on the eve of the British rule.</p> <p>[b] Establishment and Consolidation of the British rule: Reforms and</p>	Remember, understand, Analyze

			<p>in Assam and its role in India's freedom struggle.</p> <ul style="list-style-type: none"> The course would enable the students to analyse the main currents of the political and socioeconomic developments in Assam during the colonial period. 	<p>Reorganizations - David Scott – Annexation of Lower Assam, Administrative</p> <p>[c] Reorganisation and Revenue Measures of Scott; Robertson – Administrative and Revenue Measures; Jenkins' Administrative Measures</p>	
				<p>Unit 2:</p> <p>[a] Ahom Monarchy in Upper Assam (1833-38)</p> <p>[b] Annexation of Cachar</p> <p>[c] Early phase of Revolts and Resistance to British rule- Gomdhar Konwar, Piyali Phukan, U.Tirut Singh,</p> <p>[d] The Khamti and the Singpho rebellion [e] The 1857 Revolt in Assam and its aftermath.</p>	<p>Remember, understand, Analyze, Evaluate</p>
				<p>Unit 3:</p>	<p>Remember, understand, Analyze</p>

				<p>[a] Establishment of Chief Commissioner ship in Assam.</p> <p>[b] Land Revenue Measures and Peasant Uprisings in 19th century Assam</p> <p>[c] Growth of national consciousness – Assam Association, Sarbajanik Sabhas, Raiyat Sabhas.</p> <p>[d] Government of India Act, 1919 – Dyarchy on Trial in Assam.</p>	
				<p>Unit 4:</p> <p>[a] Non Co-operation Movement and Swarajist Politics in Assam</p> <p>[b] The Civil Disobedience Movement</p> <p>[c] Trade Union and Allied Movements Page 11 of 18</p> <p>[d] Tribal League and Politics in Assam</p>	Remember, understand, Analyze

				<p>Unit 5:</p> <p>[a] Quit India Movement in Assam.</p> <p>[b] Cabinet Mission Plan and the Grouping Controversy</p> <p>[c] The Sylhet Referendum.</p> <p>[d] Migration, Line System and its Impact on Politics in Assam</p>	Remember, understand, Analyze
25	5 th	HIS –RG-5016 History of Europe (c. 1648 – 1870)	<ul style="list-style-type: none"> After completing the course the students will be able to explain the emergence of state system in Europe and the rise of modernity. They will also be able to analyse the revolutionary upheavals of Europe that finally shaped the world 	<p>Unit 1:</p> <p>[a] Peace of Westphalia and the Pyrenees and Emergence of Modern State-System</p> <p>[b] France under Henry IV, Richelieu and Mazarin's</p> <p>[c] Era of Louis XIV : Absolute Monarchy [</p> <p>d] Bourbon succession to Spain</p>	Remember, Understand, Analyze

				<p>Unit 2:</p> <p>[a] Rise of Prussia and Austria: Frederick the Great and Maria Theresa; War of Austrian Succession,</p> <p>[b] Enlightened despotism</p> <p>[c] Making of Modern Russia: Peter the Great, Catherine II : Warm Water Policy,</p> <p>[d] Partition of Poland</p>	<p>Remember, understand, Analyze,</p>
				<p>Unit 3:</p> <p>[a] Genesis and growth of Capitalism, Imperialism, Mercantilism and World Politics</p> <p>[b] Novel intellectual currents: Natural Science and the ‘Enlightenment’</p> <p>[c] The Maritime ascendancy of Europe: Anglo- French struggle; triumph of British imperialism.</p>	<p>Remember, Understand, Analyze</p>

				[d] ‘Glorious’ Revolution : Limited Monarchy and Parliamentary Government	
				<p>Unit 4:</p> <p>[a] The French Revolution :Crisis of the <i>Ancient</i> Regime; Intellectual Currents; Participation of the Social Classes.</p> <p>[b] Rise and Fall of Napoleon: Internal Reforms, Napoleonic Wars and Continental System</p> <p>[c] The European State System after Napoleon : The Congress of Vienna, Concert of Europe</p>	Remember, understand, Analyze, Evaluate
				<p>Unit 5:</p> <p>[a] Revolutions of 1830 and 1848 and their repercussions</p> <p>[b] The Eastern Question : The Crimean War</p> <p>[c] Era of Second Napoleonic Empire :</p>	Remember, Understand, Analyze

				<p>Napoleon III : Foreign Policy</p> <p>[d] Unification of Italy</p> <p>[e] Unification of Germany</p>	
26	6 th	<p>HIS –RG-6016</p> <p>History of Europe (c. 1870 – 1939)</p>	<ul style="list-style-type: none"> • After completing the course the students will be able to explain the major political developments in Europe from 1870 to 1939. • The students will be able to delineate how the rise of two unified nations of Germany and Italy gave rise of intense imperialist contest the world over. • The course would also enable the students to analyse the causes and consequences of World War I and the developments leading to World War II. 	<p>Unit 1:</p> <p>[a] The Treaty of Versailles (1871) :</p> <p>[b] <i>Kulturkampfh</i> :</p> <p>[c] Foreign policy of Germany under Bismarck</p> <p>[d] The Paris Commune</p> <p>[e] Imperialism in Africa</p>	Remember, understand, Analyze
				<p>Unit 2:</p> <p>[a] The Eastern Question: Role of Imperialist powers</p> <p>[b] Russo-Turkish War and the Berlin Congress</p> <p>[c] Rise of nationalism and the Balkan Wars</p> <p>[d] Triple Alliance</p> <p>[e] Triple Entente</p>	Remember, understand, Analyze

				<p>Unit 3:</p> <p>[a] The First World War: Causes and consequences</p> <p>[b] The Paris Peace Conference and the Peace Settlements</p> <p>[c] League of The Nations</p> <p>[d] The Bolshevik Revolution (1917) – Rise of the USSR</p>	Remember, understand, Analyze
				<p>Unit 4:</p> <p>[a] Rise of Nazism – Germany under Hitler</p> <p>[b] Rise of Fascism - Italy under Benito Mussolini</p> <p>[c] The Spanish Civil War</p> <p>[d] Policy of appeasement</p>	Remember, understand, Analyze
				<p>Unit 5:</p> <p>[a] European involvement in East Asia</p> <p>[b] Anglo-Japanese Treaty (1902)</p>	Remember, understand, Analyze

				[c] Russo-Japanese War (1904-05) [d] The Second World War: Causes	
27	3 rd	HIS –SE-3014 Historical Tourism in North East India	<ul style="list-style-type: none"> After completing this course, students will be able to explain Tourism in North East India with special reference to the historical monuments, cultural and ecological elements and places of the north east India country as tourist and heritage sites of the nation. They will be able to relate to the growing vocation of tourism as an industry and the applicability of historical knowledge for its growth. In-semester assessment: Students shall carry out a small project (submission not less than 2000 words) based on survey of an area or monument. The project should try to unearth the tourism potential of the surveyed area or monument. The project may also be on an existing tourist site. No sessional examination is required for this paper. 	Unit 1: Theoretical aspects of tourism, Elementary geography and bio – diversity of North East India	Remember, Understand, Analyze, Evaluate
				Unit 2: Ancient remains and Important tourist places of the North – East	Remember, understand, Analyze,
				Unit 3: Architectural Heritage	Remember, Understand, Analyze
				Unit 4: Fairs and festivals of the North – East	Remember, understand, Analyze
28	4 th	HIS –SE-4014	<ul style="list-style-type: none"> After this course the students will be able to explain complex 	Unit 1: Concepts	Remember, understand, Analyze

		Oral Culture and Oral History	<p>interrelationships of structures or events in the context of broader social and cultural framework of societies through ‘public memory’ and use oral history to preserve oral culture and local history The students will be able to espouse the relevance to the northeastern region of India with its diverse culture and ethnic communities whose history is largely oral. The students will be able to use ‘Public memory’ as a tool and a source not only to write public history but also to explore new knowledge in the humanities , social sciences and even in disciplines like architecture, communication studies, gender studies, English, history, philosophy, political science, religion, and sociology.</p> <ul style="list-style-type: none"> • In-semester assessment: Students shall carry out a small project (submission not less than 2000 words) using the Oral History method. It may be based on interviews of persons having information of past event or phenomena. No sessional examination is required for this paper. 		
				Unit 2: History and Historiography	Remember, understand, Analyze, Evaluate
				Unit 3: Methodology:	Remember, understand, Analyze, Evaluate
				Unit 4: Potential areas for Oral History research :	Remember, understand, Analyze,

7. a) BA (Honours) Philosophy

SL. NO.	SEMESTER	PAPER CODE & TITLE	COURSE OUTCOMES	UNIT/ CHAPTER	BLOOM'S TAXONOMY LEVEL
1	1 st	PHI-HC-1016 Indian Philosophy- I	<ul style="list-style-type: none"> At the completion of the course, a student is expected to be able to articulate the distinct areas of thoughts of ancient India. Students become aware of the metaphysics and epistemology of various schools which help them to understand the society at large. 	Unit 1: Development of Indian Philosophy: the Vedas, the Upanisads, Bhagavadgita Meaning and scope of Indian Philosophy Schools of Indian Philosophy; the Common Characteristics of Indian Systems	Remember and Understand
				Unit 2: Carvaka Materialism: Epistemology (Denial of Inference and Testimony); Metaphysics Four	Remember and Understand

				<p>elements; denial of soul; denial of God; Ethics</p> <p>Jainism: Anekāntavāda; Syadvada; Saptabhangi Naya</p> <p>Jainism: Navatattva</p>	
				<p>Unit 3:</p> <p>Buddhism: Four Noble Truths; Suffering; Cause of Suffering and Chain of Twelve Links; Cessation of Suffering and Nirvana; Way of Cessation of Suffering and Astangika Marga</p> <p>Buddhism: Theory of Dependent Origination</p>	Remember and Understand

				Buddhism: Theory of Impermanence; Theory of No-soul	
				Unit 4: Abhidharma Schools: Vaibhāṣika (bāhya-pratyaksa-vāda); Sautrānika (bahyānumeya-vāda) Madhyamaka: Sunyavāda Yogacāra: Vijñānavāda	Remember, Understand and Evaluate
2	1 st	PHI-HC-1026 Logic- I	<ul style="list-style-type: none"> On the completion of the course students will be able to distinguish valid and invalid deductive arguments. The students will be able to identify the basic logical 	Unit 1: Argument and Argument Form Truth and Validity Deduction and Induction	Remember, Understand, Apply and Analyse

			<p>structure of arguments in ordinary language by translating them into proper logical form.</p> <ul style="list-style-type: none"> The students will be able to construct valid syllogism, and they will learn about syllogism in ordinary language. 	<p>Unit 2:</p> <p>Categorical Propositions; Translating Ordinary Proposition into Standard Form; Square of Opposition. Categorical Syllogism; Figures and Moods Immediate Inference</p>	<p>Remember, Understand, Apply and Analyse</p>
				<p>Unit 3:</p> <p>Venn Diagrammatic Representation of Propositions and Arguments Idea of Existential Import Testing Validity by Venn Diagram</p>	<p>Remember, Understand, Apply and Analyse</p>

				Unit 4: Concept of Set Operations of Set- Union, Intersection and Difference Symbolization of Sentences by Set Notations	Remember, Understand, Apply and Analyse
3	2 nd	PHI-HC-2016 Greek Philosophy	<ul style="list-style-type: none"> It will give the students a comprehensive understanding of early Greek Philosophy. The student will learn about the questions concerning virtue, justice, theory of forms, and causality. The student will learn about the different philosophical theories about the composition of the stuff that makes up the world. 	Unit 1: Thales, Anaximander, Anaximenes Pythagoras, Heraclitus, Democritus and Parmenides	Remember, Understand and Evaluate
				Unit 2: Protagoras Socrates' method Socrates' virtue	Remember, Understand and Evaluate
				Unit III: Plato	Remember, Understand and Evaluate

				<p>Knowledge and Opinion</p> <p>Theory of Forms</p> <p>Justice</p>	
				<p>Unit IV: Aristotle</p> <p>Form and Matter</p> <p>Causation</p> <p>Actuality and Potentiality</p>	Remember, Understand and Evaluate
4	2 nd	<p>PHI-HC-2026</p> <p>Logic II</p>	<ul style="list-style-type: none"> • On the completion of the course, students will be able to break down an argument and analyze the truth conditions of its component parts. • The students will be able to symbolize everyday language. • The students will be able to construct formal proof of validity. 	<p>Unit 1:</p> <p>Symbolic Logic and its Characteristics, Uses of Symbols Relation between Traditional Logic and Symbolic Logic, Modern Classification of Propositions</p>	Remember, Understand, Apply and Analyse
				<p>Unit 2:</p> <p>Logical Connectives and Variables</p> <p>Symbolization of Sentences Symbolization</p>	Remember, Understand, Apply and Analyse

				of Arguments	
				Unit 3: Truth Tables for Logical Connectives Direct Truth-Table for testing validity of arguments Indirect Truth-Table for testing validity of arguments	Remember, Understand, Apply and Analyse
				Unit 4: Formal Proof of Validity Rules of Inference Rules of Replacement	Remember, Understand, Apply and Analyse
5	2 nd	PHI-HC-2026 Logic II	<ul style="list-style-type: none"> On the completion of the course, students will be able to break down an argument and analyze the truth conditions of its component parts. 	Unit 1: Symbolic Logic and its Characteristics, Uses of Symbols Relation between Traditional Logic and Symbolic Logic, Modern Classification of	Remember, Understand, Apply and Analyse

			<ul style="list-style-type: none"> • The students will be able to symbolize everyday language. • The students will be able to construct formal proof of validity. 	Propositions	
				Unit 2: Logical Connectives and Variables Symbolization of Sentences Symbolization of Arguments	Remember, Understand, Apply and Analyse
				Unit 3: Truth Tables for Logical Connectives Direct Truth-Table for testing validity of arguments Indirect Truth-Table for testing validity of arguments	Remember, Understand, Apply and Analyse
				Unit 4: Formal Proof of Validity Rules of Inference	Remember, Understand, Apply and Analyse

				Rules of Replacement	
6	3 rd	PHI-HC-3016 Western Philosophy (Descartes to Hegel)	<ul style="list-style-type: none"> It enables the students to know about thinking of the western philosophers and their system buildings. Students will be introduced to the traditional western philosophical tradition i.e. Empiricism, Rationalism etc. 	Unit 1: Rationalism Descartes: Cartesian Method, mind-body dualism Spinoza: God and Substance Leibnitz: Theory of monads, pre-established harmony	Remember, Understand Analyse and Evaluate
				Unit 2: Empiricism Locke: critique of innate ideas, substance and qualities Berkeley: esse est percipi Hume: Impression and ideas, concept of self	Remember, Understand Analyse and Evaluate
				Unit 3: Kant	Remember, Understand Analyse and Evaluate

				<p>Possibility of synthetic a priori judgement</p> <p>Space and time</p> <p>Categories</p>	
				<p>Unit 4: Hegel</p> <p>Dialectic Method</p> <p>Absolute Idealisms</p> <p>Master-slaves dialectic</p>	Remember, Understand Analyse and Evaluate
7	3 rd	PHI-HC-3026 Indian Philosophy II	<ul style="list-style-type: none"> Students is expected to be able to name the Orthodox systems of Indian philosophy. Students is expected to be able to state the basic concepts and theories that are specific to a system. 	<p>Unit 1:</p> <p>Sāṃkhya: Puruṣa; Prakṛti; Causation</p> <p>Yoga: Cittavṛtti and its Nirodha; Aṣṭāṅgika Mārga</p>	Remember, Understand and Analyse
				<p>Unit 2:</p> <p>Nyāya: Pramānas</p> <p>Vaiśeṣika: Padārthas; Atomistic theory of Creation</p>	Remember, Understand and Analyse

				<p>Unit 3:</p> <p>Mimāṃsa: Pramānas</p> <p>Mimāṃsa: Pramānyavāda; Khyātivāda</p>	Remember, Understand and Analyse
				<p>Unit 4:</p> <p>Śāṅkara: Brahman; Atman; Adhyāsa and Avidyā</p> <p>Rāmanuja; Brahman; Jiva and Jagat; Apr̥thaksiddhi</p> <p>Sankardeva's concept of God and Bhakti</p>	Remember, Understand and Analyse
8	3 rd	PHI-HC-3036 Ethics	<ul style="list-style-type: none"> • The course will develop analytic and critical thinking regarding ethical dilemmas. • The course will enhance the ability to apply ethical principles in decision making. 	<p>Unit 1:</p> <p>Nature, Scope and Utility of study of Ethics</p> <p>Object of Moral Judgement, Moral Obligation</p>	Remember, Understand, Apply and Evaluate

			<ul style="list-style-type: none"> Students will be able to see how moral principles are involved in different concrete situations. 	Postulates of Morality	
				Unit 2: Virtue Ethics: Aristotle Deontological Ethics: Kant Utilitarianism: Bentham, Mill	Remember, Understand, Apply and Evaluate
				Unit 3: Theories of Punishment Professional Ethics Environmental Ethics	Remember, Understand, Apply and Evaluate
				Unit 4: Law of Karma, Varṇa and Aśrama Dharma, Puruṣārtha Buddhist Pañcaśīla; Brahmavihāra	Remember, Understand, Apply and Evaluate

				Jaina Triratna, Aṇuvrata and Mahāvratā	
9	4 th	PHI-HC-4016 Contemporary Indian Philosophy	<ul style="list-style-type: none"> The course is expected to make the students learn how to compare the contemporary approach to philosophy with the traditional one. The course is expected to make the students explain as well as analyze the concepts as found in the philosopher. The course is expected to make the students revise their philosophical outlook in the light of contemporary Indian philosophy. 	Unit 1: Aurobindo Evolution Super mind Synthesis of yoga	Remember, Understand and Analyse
				Unit 2: Radhakrishnan Religious experience Intellect and intuition Man and his destiny	Remember, Understand and Analyse
				Unit 3: Gandhi Religion, Truth, Non-violence Satyagraha, Sarvodaya, Swadeshi	Remember, Understand and Analyse

				<p>Critique of industrialisation, trusteeship</p>	
				<p>Unit 4: Vivekananda</p> <p>Universal religion</p> <p>Practical Vedanta</p> <p>Philosophy of education</p>	Remember, Understand and Analyse
10	4 th	PHI-HC-4026 Philosophy of Religion	<ul style="list-style-type: none"> The course is expected to enable the students to provide philosophical justification of the important religious concepts like proofs for the existence of God, relation between God and the world, faith and reason, etc. The course is expected to enable the students to justify the issues of immortality of the soul, 	<p>Unit 1:</p> <p>Nature of Philosophy of religion and its distinction from theology</p> <p>Religious experience</p> <p>Religion and Science</p>	Remember, Understand and Analyse
				<p>Unit 2:</p> <p>Ontological argument</p>	Remember, Understand and Analyse

			<p>freedom of the will, miracle, incarnation, etc.</p> <ul style="list-style-type: none"> The course is expected to provide the students with proper understanding and clarification of the concepts. 	<p>Cosmological argument; Teleological argument</p> <p>Moral argument</p>	
				<p>Unit 3:</p> <p>Reason, Faith and Revelation Freedom of Will Immortality of the soul</p>	Remember, Understand and Analyse
				<p>Unit 4:</p> <p>Religious language and symbolism</p> <p>Anti-religious theories- Materialism and logical positivism</p> <p>Religious Philosophy of Sankaradeva</p>	Remember, Understand and Analyse
11	4 th	PHI-HC-4036		Unit 1:	Remember and Understand

		Political & Social Philosophy	<ul style="list-style-type: none"> The course is expected to make the students describe as well as analyse the social and political concepts. Students will be able to express thoughts on some major philosophical questions in the area of social and political philosophy with respect to the intellectual and historical developments of the questions. 	Rights and Duties Hatice Equality & Liberty	
				Unit 2: Anarchism Socialism Marxism	Remember and Understand
				Unit 3: Monarchy Theocracy Democracy	Remember and Understand
				Unit 4: Humanism Secularism	Remember and Understand

				Multiculturalism	
12	5 th	PHI-HC-5016 Analytic Philosophy	<ul style="list-style-type: none"> The students will be able to understand the features of analytic philosophy, and will be able to distinguish between classical philosophy and analytic philosophy. The students will be understand the importance of language in dissecting philosophical issues. The students will be able to inculcate critical and reflective thinking. 	Unit 1: Moore: The Analytic Turn of Philosophy Moore: Refutation of Idealism Moore: Defence of Common Sense	Remember, Understand and Analyse
				Unit 2: Russell: Logical Atomism Russell: General Propositions and Existence Russell: Theory of Description	Remember, Understand and Analyse
				Unit 3:	Remember, Understand and Analyse

				<p>Wittgenstein: The World as a Totality of Facts</p> <p>Wittgenstein: Picture Theory of Meaning</p> <p>Vienna Circle: Verification Theory and Rejection of Metaphysics</p>	
				<p>Unit 4:</p> <p>Wittgenstein: Meaning and Use</p> <p>Wittgenstein: Language Game</p> <p>Wittgenstein: Critique of Private Language</p>	Remember, Understand and Analyse
13	5 th	<p>PHI-HC-5026</p> <p>Phenomenology and Existentialism</p>	<ul style="list-style-type: none"> The learning objective of the course is to enable students to 	<p>Unit 1: Kierkegaard</p> <p>The three stages of human existence</p>	Remember, Understand and Evaluate

			<p>understand the meaning of life that is not superficial.</p> <ul style="list-style-type: none"> The learning objective is to make the students come face-to-face with real life-problems and also various ways to improve and work on their will to live life well. 	<p>Subjectivity and Truth</p>	
				<p>Unit 2: Sartre</p> <p>Existence and Essence</p> <p>Freedom and Choice</p>	<p>Remember, Understand and Evaluate</p>
				<p>Unit 3: Heidegger</p> <p>Authentic existence</p> <p>Being-in-the-world and</p> <p>Temporality</p>	<p>Remember, Understand and Evaluate</p>
				<p>Unit 4: Husserl</p> <p>Theory of essence</p> <p>Intentionality and</p> <p>Bracketing</p>	<p>Remember, Understand and Evaluate</p>
14	5 th	PHI-HE-5016	<ul style="list-style-type: none"> The students will be able to understand the Upanisadic 	Unit 1:	Remember and Understand

		Philosophy of Upanisads	interpretations about the general social conditions, Ultimate reality and individual.	Relation to Vedas General Social Conditions Outlines of Upanisadic Philosophy	
				Unit 2: Diversity of Theories in Creation Acosmic Theory of Creation Cosmic Theory of Creation	Remember and Understand
				Unit 3: Brahman, the Absolute Brahman, the World-Ground Brahman as Cosmic and Acosmic Ideal	Remember and Understand

				Unit 4: Individual Destiny: Individual Soul Karma and Saṃsāra Liberation	Remember and Understand
15	5 th	PHI-HE-5026 Philosophy of Gita	<ul style="list-style-type: none"> The students will be able to understand the basic ideas and theories of the Gita. The students will be able to apply ethical principles derived from the Gita to real-life scenarios. 	Unit 1: Law of Karma Concept of Karma, Akarma, Vikarma Freedom and Choice	Remember, Understand and Apply
				Unit 2: Kṣetra-Kṣetrajña, puruṣa-prakṛti	Remember, Understand and Apply

				Uttama Puruṣa and Ultimate Reality Relation of individual self and Ultimate Reality	
				Unit 3: Conception of Yoga Karma Yoga, Jñāna Yoga, Bhakti Yoga Reconciliation of the Yogas	Remember, Understand and Apply
				Unit 4: Svabhāva, Svakarma, Svadharma Niṣkamakarmayoga; Lokasaṃgraha Liberation	Remember, Understand and Apply
16	6 th	PHI-HC-6016		Unit 1:	Remember and Understand

		Philosophy of Mind	<ul style="list-style-type: none"> • The students will be able to think critically about human mind. • The students will be able to acquired the knowledge of mind-body problems and theories. 	Psychology and Philosophy of mind Cartesian dualism Problems of Cartesian dualism	
				Unit 2: Parallelism Occasionalism Epiphenomenalism	Remember and Understand
				Unit 3: Behaviourism Identity theory Functionalism	Remember and Understand
				Unit 4:	Remember and Understand

				Problem of Personal identity Physical Criterion Memory Criterion	
17	6 th	PHI-HC-6026 Meta Ethics	<ul style="list-style-type: none"> The course is expected to enable the students to understand about the ethical properties, statements, attitudes, and judgements. 	Unit 1: Normative Ethics Ethical Concepts and Evaluation-Good and Right Meta Ethics	Remember, Understand and Analyse
				Unit 2: G. E. Moore: Indefinability of 'Good' G. E. Moore: Naturalistic Fallacy	Remember, Understand and Analyse

				G. E. Moore: Autonomy of Morals	
				Unit 3: A. J. Ayer: Ethical Terms as Pseudo Concepts C.L. Stevenson: Characteristics of Moral Discourse C.L. Stevenson: Persuasive Definition	Remember, Understand and Analyse
				Unit 4: R. M. Hare: Universal Prescriptivism R. M. Hare: Nature of Moral Arguments R. M. Hare: Weakness of the Will	Remember, Understand and Analyse

18	6 th	<p style="text-align: center;">PHI-HE-6026</p> <p style="text-align: center;">Philosophy of Language</p>	<ul style="list-style-type: none"> • Students will be able to make the basis difference between philosophical study of Language and scientific study of Language. • Students will be able to appreciate the different approaches to meaning. • They will be able to appreciate the different acts that are performed by different utterances. 	<p>Unit 1:</p> <p>Language and World</p> <p>Frege's Sense and Reference</p> <p>Russell's Definite Description</p>	Remember, Understand and Evaluate
				<p>Unit 2:</p> <p>Ideational Theory of Meaning</p> <p>Referential Theory of Meaning</p> <p>Use Theory of Meaning</p>	Remember, Understand and Evaluate
				<p>Unit 3:</p> <p>Correspondence Theory of Truth</p> <p>Coherence Theory of Truth</p>	Remember, Understand and Evaluate

				Pragmatic Theory of Truth	
				Unit 4: Performative and Constative Utterances Locutionary, Illocutionary and Perlocutionary Acts Theory of Illocutionary Forces	Remember, Understand and Evaluate
19	6 th	PHI-HE-6036 Applied Ethics	<ul style="list-style-type: none"> • Students will be able to acquaint themselves with basic concepts of applied ethics. • Students will be able to understand problematic moral situations in practical lives and to reflect on their solutions from an ethical perspective. 	Unit 1: Nature of Applied Ethics, its scope Applied Ethics and Human Values	Remember, Understand, Apply and Evaluate
				Unit 2: Use and exploitation of nature Animal killing and animal rights	Remember, Understand, Apply and Evaluate

				Unit 3: Computer crime Ethics and Legal aspects of virtual worlds	Remember, Understand, Apply and Evaluate
				Unit 4: Rights and obligations of health care professionals, Patients and family, Abortion, Euthanasia: Active and Passive	Remember, Understand, Apply and Evaluate

7. b) BA (Regular, Generic) Philosophy

20	1 st	PHI-HG/RC-1016 General Philosophy	<ul style="list-style-type: none"> The course will enable students to understand various philosophical concepts like substance, causality, space, and time, etc. 	Unit 1: Definition, Nature and Scope of Philosophy Branches of Philosophy Realism and Idealism	Remember, Understand and Evaluate
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			<ul style="list-style-type: none"> Students will become familiar with certain ways of putting arguments about the concepts. Students will also learn the different approaches taken up by rationalism, empiricism and critical thinkers in understanding the concepts. The course is expected to make the students able to analyze various theories of truth. 	Unit 2: Substance Causality Space and Time	Remember, Understand and Evaluate
				Unit 3: Empiricism, Rationalism Criticism Scepticism	Remember, Understand and Evaluate
				Unit 4: Correspondence Coherence Pragmatic and Semantic	Remember, Understand and Evaluate
21	2 nd	PHI-HG/RC-2016 Indian Philosophy	<ul style="list-style-type: none"> Understanding Indian philosophical thought through the basic knowledge of orthodox 	Unit 1: Development of Indian Philosophy, Meaning and	Remember, Understand and Analyse

			and heterodox trends of Indian Philosophy.	scope of Indian Philosophy, Schools of Indian Philosophy, Common Characteristic of Indian Systems	
				Unit 2: Buddhism: Four Noble Truths Buddhism: Theory of Impermanence; No-soul theory Jainism: Syādvāda, Anekāntavāda	Remember, Understand and Analyse
				Unit 3: Sāmkhya: Purusha; Nature Samkhya: Evolution Nyaya: Pramānas	Remember, Understand and Analyse

				<p>Unit 4:</p> <p>Sankara: Brahman</p> <p>Šaṅkara: Avidya & Adhyāsa</p> <p>Ramanuja: Brahman; Jiva and Prakriti</p>	Remember, Understand and Analyse
22	3 rd	PHI-HG/RC-3016 Ethics	<ul style="list-style-type: none"> • The course will develop analytic and critical thinking regarding ethical dilemmas. • The course will enhance the ability to apply ethical principles in decision making. • Students will be able to see how moral principles are involved in different concrete situations. 	<p>Unit 1:</p> <p>Nature, Scope and Utility of study of Ethics</p> <p>Object of Moral Judgement, Moral Obligation</p> <p>Postulates of Morality</p>	Remember, Understand, Apply and Evaluate
				<p>Unit 2:</p> <p>Virtue Ethics: Aristotle</p> <p>Deontological Ethics: Kant</p>	Remember, Understand, Apply and Evaluate

				Utilitarianism: Bentham, Mill	
				Unit 3: Theories of Punishment Professional Ethics Environmental Ethics	Remember, Understand, Apply and Evaluate
				Unit 4: Law of Karma, Varṇa and Aśrama Dharma, Puruṣārtha Buddhist Pañcaśīla; Brahmavihāra Jaina Triratna, Aṇuvrata and Mahāvratā	Remember, Understand, Apply and Evaluate
23	4 th	PHI-HG/RC-4016		Unit 1:	Remember, Understand, Apply and Analyse

		<p style="text-align: center;">Logic</p>	<ul style="list-style-type: none"> • On the completion of the course students will be able to distinguish valid and invalid deductive arguments. • The students will be able to identify the basic logical structure of arguments in ordinary language by translating them into proper logical form. • The students will be able to construct valid syllogisms, and they will learn about syllogisms in ordinary language. 	<p>Fundamental Concepts of Logic Propositions and Arguments</p> <p>Truth and Validity</p> <p>Deduction and Induction</p>	
				<p>Unit 2:</p> <p>Aristotelian Syllogistic Logic</p> <p>Categorical Propositions, Translating Ordinary Proposition into Standard Form</p> <p>Square of Opposition</p> <p>Categorical Syllogism, Figures and Moods</p> <p>Immediate Inference</p>	<p>Remember, Understand, Apply and Analyse</p>
				<p>Unit 3:</p>	<p>Remember, Understand, Apply and Analyse</p>

				<p>Symbolic Logic: Introduction</p> <p>Symbolic Logic and its Characteristics, Uses of Symbols Relation between Traditional Logic and Symbolic Logic</p> <p>Modern Classification of Propositions</p>	
				<p>Unit 4: Propositional Logic</p> <p>Logical Connectives: and, or, not; Material Conditional, Bi-conditional</p> <p>Symbolization of everyday language</p> <p>Truth-Table method of testing validity of argument, Shorter Truth Table</p>	<p>Remember, Understand, Apply and Analyse</p>

24	5 th	<p style="text-align: center;">PHI-RE-5016</p> <p>Contemporary Indian Philosophy</p>	<ul style="list-style-type: none"> • The course is expected to make the students learn how to compare the contemporary approach to philosophy with the traditional one. • The course is expected to make the students explain as well as analyze the concepts as found in the philosopher. • The course is expected to make the students revise their philosophical outlook in the light of contemporary Indian philosophy. 	<p>Unit 1: Aurobindo</p> <p>Evolution</p> <p>Super mind</p> <p>Synthesis of yoga</p>	Remember, Understand and Analyse
				<p>Unit 2: Radhakrishnan</p> <p>Religious experience</p> <p>Intellect and intuition</p> <p>Man and his destiny</p>	Remember, Understand and Analyse
				<p>Unit 3: Gandhi</p> <p>Religion, Truth, Non-violence</p> <p>Satyagraha, Sarvodaya, Swadeshi</p> <p>Critique of industrialisation, trusteeship</p>	Remember, Understand and Analyse

				<p>Unit 4: Vivekananda</p> <p>Universal religion</p> <p>Practical Vedanta</p> <p>Philosophy of education</p>	Remember, Understand and Analyse
25	5 th	PHI-GE-5016 Indian Yogic Tradition	<ul style="list-style-type: none"> The students will be able to gain a comprehensive knowledge of the diverse paths within the yogic tradition and respective philosophical underpinnings. Students will be able to acquire practical skills for personal growth by applying concepts like the eightfold path to improved mental and spiritual well-being. 	<p>Unit 1:</p> <p>Meaning and Essence of Yoga</p> <p>Jnana Yoga, Karma Yoga, Bhakti Yoga</p>	Remember, Understand, Apply and Analyse
				<p>Unit 2:</p> <p>Levels of Mental Life (Cittabhumi)</p> <p>Eightfold Means of Yoga (Yoganga)</p>	Remember, Understand, Apply and Analyse
				<p>Unit 3:</p>	Remember, Understand, Apply and Analyse

				<p>Buddhist Conception of Yoga</p> <p>Jaina Conception of Yoga</p>	
				<p>Unit 4:</p> <p>Swami Vivekananda on Raja Yoga</p> <p>Sri Aurobindo's Integral Yoga</p>	Remember, Understand, Apply and Analyse
26	6 th	<p>PHI-RE/GE-6016</p> <p>Philosophy of Religion</p>	<ul style="list-style-type: none"> The course is expected to enable the students to provide philosophical justification of the important religious concepts like proofs for the existence of God, relation between God and the world, faith and reason, etc. The course is expected to enable the students to justify the issues of immortality of the soul, 	<p>Unit I:</p> <p>Religious Concepts Faith and Revelation</p> <p>Idea of the Holy Soul and Immortality</p>	Remember, Understand and Analyse
				<p>Unit 2:</p> <p>Arguments for Existence of God</p>	Remember, Understand and Analyse

			freedom of the will, miracle, incarnation, etc.	Ontological Cosmological Teleological; Moral	
				Unit 3: Theories of Belief in God Polytheism Deism Monotheism	Remember, Understand and Analyse
				Unit 4: Relation of God and World Deism Pantheism Panentheism	Remember, Understand and Analyse
27	6 th	PHI-RE-6026 Political & Social Philosophy	<ul style="list-style-type: none"> The course is expected to make the students describe as well as 	Unit 1: Rights and Duties	Remember and Understand

			<p>analyse the social and political concepts.</p> <ul style="list-style-type: none"> Students will be able to express thoughts on some major philosophical questions in the area of social and political philosophy with respect to the intellectual and historical developments of the questions. 	<p>Justice</p> <p>Equality & Liberty</p>	
				<p>Unit 2:</p> <p>Anarchism</p> <p>Socialism</p> <p>Marxism</p>	Remember and Understand
				<p>Unit 3:</p> <p>Monarchy</p> <p>Theocracy</p> <p>Democracy</p>	Remember and Understand
				<p>Unit 4:</p> <p>Humanism</p> <p>Secularism</p> <p>Multiculturalism</p>	Remember and Understand

28	3 rd	<p style="text-align: center;">PHI-SE-3014</p> <p style="text-align: center;">Philosophical Counselling</p>	<ul style="list-style-type: none"> • On completion of the course students are expected to be able to understand the scope of philosophical vis-à-vis Psychological Counselling. • The student will be able to inculcate self-confidence in one's own abilities to reason. • The student will be able to understand the opinions of other people. 	<p>Unit 1:</p> <p>Introduction to Philosophical Counselling</p> <p>Philosophical Counselling-its meaning and scope</p> <p>History of Philosophical Counselling</p> <p>Philosophical Counselling versus Psychological Counselling</p>	<p>Remember, Understand and Evaluate</p>
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			<ul style="list-style-type: none"> • On completion of the course students are expected to be able to develop flexibility in considering alternatives and opinions. • On completion of the course students are expected to be able to overcome personal problems by adopting different philosophical approaches to philosophical counselling. • On completion of the course students are expected to be able to develop fair-mindedness in appraising reasoning. 	Unit 2: Approaches to Philosophical Counselling a. Critical Thinking Approach-Logic- Based Therapy (LBT)- Philosophical Principles of LAT, LBT fallacies, antidotes b. Wisdom Approach c. Existential Approach-Existentialism Based Therapy-Authentic and Inauthentic Life	Remember, Understand, Apply and Evaluate
29	4 th	PHI-SE-4014 Critical Thinking	<ul style="list-style-type: none"> • At the completion of the course the student is expected to be able to analyze the original and primary ideas of various thinkers. 	Unit 1: Introduction to Critical thinking Thought and Training of Thought	Remember, Understand, Apply and Evaluate

			<ul style="list-style-type: none"> • The student is expected to be able to write in comprehensible, unambiguous language. • The student is expected to be able to present ideas in organized, efficient, methodical ways. • The student is expected to be able to develop ancillary skills of observation, reasoning, decision making etc. • The student is expected to be able to put forth logically sound and persuasive arguments. • The student is expected to be able to develop effective communication skill. 	<p>Critical thinking, Benefits and Barriers of Critical Thinking</p> <p>Asking Right Questions</p>	
				<p>Unit 2: Critical Writing</p> <p>Introduction to Critical and Analytical Writing</p> <p>Paraphrasing-(a) Short quotes and (b) Clarifying texts Making Effective Notes</p>	Remember, Understand, Apply and Evaluate
30	5 th	PHI-SE-5014 Reasoning and Logic	<ul style="list-style-type: none"> • On completion of the course students are expected to be able to identify logical fallacies in day-today conversations and argumentations. 	<p>Unit 1: Propositions and Arguments</p> <p>Deductive and Inductive Arguments</p>	Remember, Understand, Apply and Evaluate

			<ul style="list-style-type: none"> • On completion of the course students are expected to be able to avoid committing fallacies. • On completion of the course students are expected to be able to provide well-reasoned arguments in any discourse. 	<p>Kinds of Deductive Inference: mediate and immediate inferences</p> <p>Syllogism in Ordinary Language (Enthymemes, Sorites, Deductive and Hypothetical Syllogisms, Dilemma)</p>	
				<p>Unit 2: Informal Fallacies</p> <p>A. Fallacies of Relevance:</p> <p>R₁ ARGUMENT AD POPULUM (The Appeal to Emotion)</p> <p>R₂ THE RED HERRING</p> <p>R₃ THE STRAW MAN</p> <p>R₄ ARGUMENT AD HOMINEM (Argument against the Person)</p>	<p>Remember, Understand, Apply and Evaluate</p>

				<p>R₅ ARGUMENT AD BACULUM (The Appeal to Force)</p> <p>R₆ IGNORATIO ELENCHI (Missing the Point)</p> <p>B. Fallacies of Defective Induction:</p> <p>D₁ ARGUMENT AD IGNORANTIAM (The Argument from Ignorance)</p> <p>D₂ ARGUMENT AD VERECUNDIAM (The Appeal to Inappropriate Authority)</p> <p>D₃ ARGUMENT NON CAUSA PRO CAUSA (False Cause)</p> <p>D₄ Hasty Generalization</p> <p>C. Fallacies of Presumption</p>	
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				<p>P₁ Accident</p> <p>P₂ Complex Question</p> <p>P₃ PETITIO PRINCIPII (Begging the Question)</p> <p>D. Fallacies of Ambiguity</p> <p>A₁ Equivocation</p> <p>A₂ Amphiboly</p> <p>A₃ Accent</p> <p>A₄ Composition</p> <p>A₅ Division</p>	
31	6 th	<p>PHI-SE-6014</p> <p>Environmental Ethics</p>	<ul style="list-style-type: none"> On completion of the course students are expected to be able to articulate the importance and role of Environment. On completion of the course students are expected to be able to uncover and explicate the fundamental significance of 	<p>Unit 1: Ethics and Environmental Ethics</p> <p>Nature of Ethics: Normative Ethics, Meta-Ethics and Applied Ethics</p> <p>Nature and Scope of Environmental Ethics</p>	Remember, Understand, Apply and Evaluate

			<p>environment in terms of the present as well as the future human and non-human worlds.</p> <ul style="list-style-type: none"> On completion of the course students are expected to be able to understand one's duties and responsibilities towards protection of environment. 	<p>Relation between Ethics, Applied Ethics and Environmental Ethics</p>	
				<p>Unit 2:: Theories of Environmental Ethics</p> <p>Anthropocentrism: Weak and Strong, Ecocentrism: Land Ethics, Deep Ecology</p> <p>Biocentrism: Biodiversity and Animal Rights</p>	<p>Remember, Understand, Apply and Evaluate</p>

8. a) BA (Honours) Political Sciences

SL. NO.	SEMESTER	PAPER CODE & TITLE	COURSE OUTCOMES	UNIT/ CHAPTER	BLOOM'S TAXONOMY LEVEL
1	1 st	POL-HC-1016 Understanding Political Theory	<ul style="list-style-type: none"> To introduce the idea of political theory and various approaches. To enable the students to assess the contemporary trends of political theory. To reconcile theory and practice in relation to democracy. 	Unit 1: Introducing Political Theory	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Political Theory and Practice, The Grammar of Democracy	Remember, Understand, Apply, Analyse, Evaluate
2	1 st	POL-HC-1026 Constitutional Government and Democracy in India	<ul style="list-style-type: none"> Acquaint students with constitutional design of state structures and institutions. To understand the conflicts in constitutional provisions. To make them comprehend the state institutions in relation to extra constitutional environment. 	Unit 1: The Constituent Assembly and the Constitution	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Organs of Government	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Federalism and Decentralization	Remember, Understand, Apply, Analyse, Evaluate
3	2 nd	POL-HC-2016	<ul style="list-style-type: none"> Understand the various concepts in political theory and appreciate 	Unit 1: Importance of Freedom	Remember, Understand, Apply, Analyse, Evaluate

		Political Theory-Concepts and Debates	<p>how they can be helpful to analyse crucial political issues.</p> <ul style="list-style-type: none"> • Understand the significance of debates in political theory in exploring multiple perspectives to concepts, ideas and issues. • Appreciate how these concepts and debates enrich political life and issues surrounding it. 	<p>Unit 2: Significance of Equality</p>	Remember, Understand, Apply, Analyse, Evaluate
				<p>Unit 3: Indispensability of Justice</p>	Remember, Understand, Apply, Analyse, Evaluate
				<p>Unit 4: The Universality of Rights</p>	Remember, Understand, Apply, Analyse, Evaluate
4	2 nd	POL-HC-2026 Political Process in India	<ul style="list-style-type: none"> • Understand the working of major political institutions in India. • Understand the major debates in Indian politics along the axes of caste, gender, region and religion. • Understand the changing nature of the Indian state and the contradictory dynamics of modern state power. 	<p>Unit 1: Political Parties and the Party System</p>	Remember, Understand, Apply, Analyse, Evaluate
				<p>Unit 2: Determinants of Voting Behaviour</p>	Remember, Understand, Apply, Analyse, Evaluate
				<p>Unit 3: Regional Aspirations</p>	Remember, Understand, Apply, Analyse, Evaluate
				<p>Unit 4: Religion and Politics</p>	Remember, Understand, Apply, Analyse, Evaluate
				<p>Unit 5: Caste and Politics</p>	Remember, Understand, Apply, Analyse, Evaluate

				Unit 6: Affirmative Action Policies	Remember, Understand, Apply, Analyse, Evaluate
				Unit 7: The Changing Nature of the Indian State	Remember, Understand, Apply, Analyse, Evaluate
5	3 rd	POL-HC-3016 Introduction to Comparative Government and Politics	<ul style="list-style-type: none"> To make students understand the basic concepts in comparative politics. To make students classify the different political systems and historical context of modern governments. To enable students to have a comparative analysis of countries related to their political institutions and behaviour. 	Unit 1: Understanding Comparative Politics	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Historical context of modern government	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Themes for comparative analysis	Remember, Understand, Apply, Analyse, Evaluate
6	3 rd	POL-HC-3026	<ul style="list-style-type: none"> To enable students to learn the basic concepts related to public 	Unit 1: Public administration as a discipline	Remember, Understand, Apply, Analyse, Evaluate

		Perspectives on Public Administration	<p>administration and its importance.</p> <ul style="list-style-type: none"> To make students learn the major theories of public administration. To enable students to have an understanding of public policy and its formulation. To familiarize students with the major approaches and recent debates related to field of public administration. 	<p>Unit 2: Theoretical perspectives</p>	Remember, Understand, Apply, Analyse, Evaluate
				<p>Unit 3: Public policy</p>	Remember, Understand, Apply, Analyse, Evaluate
				<p>Unit 4: Major approaches in public administration</p>	Remember, Understand, Apply, Analyse, Evaluate
7	3 rd	POL-HC-3036 Perspectives on International Relations and World History	<ul style="list-style-type: none"> To make students understand the key theoretical approaches in International relations. To familiarize students with the evolution of International state systems and its importance. To make students aware of the key theoretical debates in International relations To enable students to have an overall understanding of International relations in relation to twentieth century IR history. 	<p>Unit 1: Studying International Relations</p>	Remember, Understand, Apply, Analyse, Evaluate
				<p>Unit 2: Theoretical Perspectives</p>	Remember, Understand, Apply, Analyse, Evaluate
				<p>Unit 3: An Overview of Twentieth Century IR History</p>	Remember, Understand, Apply, Analyse, Evaluate

8	4 th	POL-HC-4016 Political Processes and Institutions in Comparative Perspective	<ul style="list-style-type: none"> To understand, comprehend and analyse the complex nature and functioning of the political systems, political institutions and corresponding issues to these both in a country specific case of India and cross-country perspectives. To demonstrate critical thinking about key issues of political system of different forms, political process and public policy. To use the contents and sub-units of the course as yardsticks for comparing these political systems and processes. 	Unit 1: Approaches to Studying Comparative Politics	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Electoral System	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Party System	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Nation-state	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Democratization	Remember, Understand, Apply, Analyse, Evaluate
				Unit 6: Federalism	Remember, Understand, Apply, Analyse, Evaluate
9	4 th	POL-HC-4026 Public Policy and Administration in India	<ul style="list-style-type: none"> Be familiarised with and gain knowledge about the processes of public policy making in India and their significance in administering the state. Develop the ability to assess the functioning of the government and the administration in 	Unit 1: Public Policy	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Decentralization	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Budget	Remember, Understand, Apply, Analyse, Evaluate

			ensuring a citizen centric welfare administration in India.	Unit 4: Citizen and Administration Interface	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Social Welfare Administration	Remember, Understand, Apply, Analyse, Evaluate
10	4 th	POL-HC-4036 Global Politics	<ul style="list-style-type: none"> To enable students to understand how to approach a wide range of important global political and economic policy problems and participate in public policy debates on the crucial issues facing the world today. To have knowledge of the essential theoretical assumptions underlying globalization's conceptual frameworks and their relationships to policy interventions. To demonstrate elementary knowledge of major issues and subject-matters surrounding globalization that decides the international relations- <i>political, economic and security relations</i>- among the nations. 	Unit 1: Globalization: Conceptions and Perspectives	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Contemporary Global Issues	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Global Shifts: Power and Governance	Remember, Understand, Apply, Analyse, Evaluate
11	5 th	POL-HC-5016		Unit 1: Text and Interpretation	Remember, Understand, Apply, Analyse, Evaluate

		Classical Political Philosophy	<ul style="list-style-type: none"> To interpret ideas underlying traditions in classical political philosophy. To analyze the debates and arguments of leading political philosophers belonging to different traditions of the period. To appraise the relevance of classical political philosophy in understanding contemporary politics 	Unit 2: Antiquity	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Interlude	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Possessive Individualism	Remember, Understand, Apply, Analyse, Evaluate
12	5 th	POL-HC-5026 Indian Political Thought-I	<ul style="list-style-type: none"> To underline themes and issues in political traditions of pre-colonial India. To compare and contrast positions of different political traditions those were present in pre-colonial India. To evaluate the relevance of political thought of pre-colonial India for contemporary politics. 	Unit 1: Traditions of Pre-colonial Indian Political Thought Syncretic.	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Ved Vyasa (Shantiparva): Rajadharm	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Manu: Social Laws	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Kautilya: Theory of State	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Aggannasutta (Digha Nikaya): Theory of kingship	Remember, Understand, Apply, Analyse, Evaluate

				Unit 6: Barani: Ideal Polity	Remember, Understand, Apply, Analyse, Evaluate
				Unit 7: Abul Fazal: Monarchy VIII. Kabir: Syncretism	Remember, Understand, Apply, Analyse, Evaluate
13	5 th	POL-HE-5016 Human Rights	<ul style="list-style-type: none"> To describe the basic concepts of human rights. To comprehend different approaches regarding human rights. To familiarise the role of UNO in the growth and development of human rights To describe different measures taken for the protection of human rights 	Unit 1: Introduction to Human Rights	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Approaches and perspectives	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Human Rights and UNO	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Human rights and the role of NGOs	Remember, Understand, Apply, Analyse, Evaluate
14	5 th	POL-HE-5046 Select Constitutions - I	<ul style="list-style-type: none"> Students will be able to understand the importance of constitutions. This paper is an integral part of public services examinations. Students will be introduced to the various types of constitutions 	Unit 1: United Kingdom	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: United States of America	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Peoples Republic of China	Remember, Understand, Apply, Analyse, Evaluate

			and the forms of governments from different parts of the world.	Unit 4: Switzerland	Remember, Understand, Apply, Analyse, Evaluate
15	6 th	POL-HC-6016 Modern Political Philosophy	<ul style="list-style-type: none"> To interpret ideas underlying traditions in modern political philosophy. To analyze the debates and arguments of leading political philosophers of different philosophical traditions. To appraise the relevance of modern political philosophy in understanding contemporary politics. 	Unit 1: Modernity and its discourses	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Romantics	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Liberal socialist	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Radicals	Remember, Understand, Apply, Analyse, Evaluate
16	6 th	POL-HC-6026		Unit 1: Introduction to Modern Indian Political Thought	Remember, Understand, Apply, Analyse, Evaluate

		<p>Indian Political Thought-II</p>	<ul style="list-style-type: none"> • To underline themes and issues in political thought of modern India. • To compare and contrast positions of leading political thinkers in India on issues those are constitutive of modern India. • To assess the relevance of political thought of modern India in understanding contemporary politics. 	<p>Unit 2: Rammohan Roy: Rights</p>	<p>Remember, Understand, Apply, Analyse, Evaluate</p>
				<p>Unit 3: Pandita Ramabai: Gende</p>	<p>Remember, Understand, Apply, Analyse, Evaluate</p>
				<p>Unit 4: Vivekananda: Ideal Society</p>	<p>Remember, Understand, Apply, Analyse, Evaluate</p>
				<p>Unit 5: Gandhi: Swaraj</p>	<p>Remember, Understand, Apply, Analyse, Evaluate</p>
				<p>Unit 6: Ambedkar: Social Justice</p>	<p>Remember, Understand, Apply, Analyse, Evaluate</p>
				<p>Unit 7: Tagore: Critique of Nationalism</p>	<p>Remember, Understand, Apply, Analyse, Evaluate</p>

				Unit 8: Iqbal: Community	Remember, Understand, Apply, Analyse, Evaluate
				Unit 9: Savarkar: Hindutva	Remember, Understand, Apply, Analyse, Evaluate
				Unit 10: Nehru: Secularism	Remember, Understand, Apply, Analyse, Evaluate
				Unit 11: Lohia: Socialism	Remember, Understand, Apply, Analyse, Evaluate
17	6 th	POL-HE-6016 Human Rights in India	<ul style="list-style-type: none"> To describe origin and development of human rights in India. To comprehend different measures adopted by India for the protection and development of human rights. To familiarise the emerging issues related to human rights. 	Unit 1: Origin and Development of Human Rights in India	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Institutional Mechanisms for Protection of Human Rights	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Emerging issues of human rights	Remember, Understand, Apply, Analyse, Evaluate

				Unit 4: Human Rights of vulnerable groups	Remember, Understand, Apply, Analyse, Evaluate
18	6 th	POL-HE-6046 Select Constitutions – II	<ul style="list-style-type: none"> Students will be able to understand the importance of constitutions. This paper is an integral part of public services examinations. Students will be introduced to the various types of constitutions and the forms of governments from different parts of the world. 	Unit 1: Peoples Republic of China	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Peoples Republic of China- II	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Switzerland- I	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Switzerland- II	Remember, Understand, Apply, Analyse, Evaluate

8. b) BA (Regular, Generic) Political Sciences

19	1 st	POL-HG-1016 Introduction to Political Theory	<ul style="list-style-type: none"> To introduce the key concepts in political theory. To make students understand the aspects of conceptual analysis. 	Unit 1: Theorizing Political	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Concepts	Remember, Understand, Apply, Analyse, Evaluate

			<ul style="list-style-type: none"> To engage the students in application of concepts and their limitations. 	Unit 3: Debates in Political Theory:	Remember, Understand, Apply, Analyse, Evaluate
20	2 nd	POL-HG-2016 Indian Government and Politics	<ul style="list-style-type: none"> To appreciate the approaches to the study of Indian politics and the changing nature of the state. To understand the basic features of the Indian constitution and its institutional functioning. To examine the changing role of caste, class and patriarchy and their impact on politics. To understand the dynamics of social movements in India. 	Unit 1: Approaches to the Study of Indian Politics and Nature of the State in India: Liberal, Marxist and Gandhian	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Indian Constitution: basic features, debates on Fundamental Rights and Directive Principles	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Institutional Functioning: Prime Minister, Parliament and Judiciary	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Power Structure in India: Caste, class and patriarchy	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Religion and Politics: debates on secularism and communalism	Remember, Understand, Apply, Analyse, Evaluate

				Unit 6: Parties and Party systems in India	Remember, Understand, Apply, Analyse, Evaluate
				Unit 7: Social Movements : Workers and Peasants	Remember, Understand, Apply, Analyse, Evaluate
				Unit 8: Strategies of Development in India since Independence: Planned Economy and Neoliberalism	Remember, Understand, Apply, Analyse, Evaluate
21	3 rd	POL-HG-3016 Comparative Government and Politics	<ul style="list-style-type: none"> To make students have a basic understanding of comparative political analysis. To make students learn the classification of political systems from a comparative politics framework. To make students learn the classification of governments and the political behavior of institutions and the changes in the nature of the nation-state. 	Unit 1: The nature, scope and methods of comparative political analysis	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Comparing Regimes: Authoritarian and Democratic	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Classifications	Remember, Understand, Apply, Analyse, Evaluate

				Apply, Analyse, Evaluate of political systems:	
				Unit 4: Electoral Systems: First past the post and proportional representation	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Party Systems: one-party, two-party and multi-party systems	Remember, Understand, Apply, Analyse, Evaluate
				Unit 6: Contemporary debates on the nature of state:	Remember, Understand, Apply, Analyse, Evaluate
22	4 th	POL-HG-4016 Introduction to International Relations	<ul style="list-style-type: none"> To demonstrate basic understanding of scientific methods of inquiry in international relations. To understand how international relations influence societies. To demonstrate a basic understanding of the foundational theories and concepts in international relations. To analyse the current world events and their implications on the Indian Foreign policy decision making process by 	Unit 1: Approaches to International Relations	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Cold War & Post-Cold War Era	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: India's Foreign Policy	Remember, Understand, Apply, Analyse, Evaluate

			applying prominent theories of international relations and generate substantial research question on the topics.		
23	1 st	POL-RC-1016 Introduction to Political Theory	<ul style="list-style-type: none"> To introduce the key concepts in political theory. To make students understand the aspects of conceptual analysis. To engage in application of concepts and limitations. 	Unit 1: Theorizing Political	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Concepts	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Debates in Political Theory	Remember, Understand, Apply, Analyse, Evaluate
24	2 nd	POL-RC-2016 Indian Government and Politics	<ul style="list-style-type: none"> To understand the approaches to the study of Indian politics and the changing nature of the state. Understand the basic features of the Indian constitution and its institutional functioning. Examine the changing role of caste, class and patriarchy and their impact on politics. Understand the dynamics of social movements in India. 	Unit 1: Approaches to the Study of Indian Politics and Nature of the State in India: Liberal, Marxist and Gandhian	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Indian Constitution: basic features, debates on Fundamental Rights and Directive Principles	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Institutional Functioning: Prime Minister, Parliament and Judiciary	Remember, Understand, Apply, Analyse, Evaluate

				Unit 4: Power Structure in India: Caste, class and patriarchy	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Religion and Politics: debates on secularism and communalism	Remember, Understand, Apply, Analyse, Evaluate
				Unit 6: Parties and Party systems in India	Remember, Understand, Apply, Analyse, Evaluate
				Unit 7: Social Movements : Workers and Peasants	Remember, Understand, Apply, Analyse, Evaluate
				Unit 8: Strategies of Development in India since Independence: Planned Economy and Neoliberalism	Remember, Understand, Apply, Analyse, Evaluate
25	3 rd	POL-RC-3016 Comparative Government and Politics	<ul style="list-style-type: none"> To make students have a basic understanding of comparative political analysis. To make students learn the classification of political systems from a comparative politics framework. 	Unit 1: The nature, scope and methods of comparative political analysis	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Comparing Regimes: Authoritarian and Democratic	Remember, Understand, Apply, Analyse, Evaluate

			<ul style="list-style-type: none"> To make students learn the classification of governments and the political behavior of institutions and the changes in the nature of the nation-state. 	Unit 3: Classifications of political systems:	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Electoral Systems: First past the post and proportional representation	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Party Systems: one-party, two-party and multi-party systems	Remember, Understand, Apply, Analyse, Evaluate
				Unit 6: Contemporary debates on the nature of state	Remember, Understand, Apply, Analyse, Evaluate
26	4 th	POL-HG-4016 Introduction to International Relations	<ul style="list-style-type: none"> To demonstrate basic understanding of scientific methods of inquiry in international relations. To understand how international relations influence societies. 	Unit 1: Approaches to International Relations	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Cold War & Post-Cold War Era	Remember, Understand, Apply, Analyse, Evaluate

			<ul style="list-style-type: none"> To demonstrate a basic understanding of the foundational theories and concepts in international relations. To analyse the current world events and their implications on the Indian Foreign policy decision making process by applying prominent theories of international relations and generate substantial research question on the topics. 	Unit 3: India's Foreign Policy	Remember, Understand, Apply, Analyse, Evaluate
27	5 th	POL-SE-5014 Public Opinion and Survey Research	<ul style="list-style-type: none"> It will introduce the students to the debates, principles and practices of public opinion polling in the context of democracies, with special reference to India. It will familiarize the students with how to conceptualize and measure public opinion using quantitative methods, with particular attention being paid to developing basic skills pertaining to the collection, analysis and utilization of quantitative data. 	Unit 1: Introduction to the course	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Measuring Public Opinion with Surveys: Representation and sampling	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Survey Research	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Quantitative Data Analysis	Remember, Understand, Apply, Analyse, Evaluate

				Unit 5: Interpreting polls	Remember, Understand, Apply, Analyse, Evaluate
28	5 th	POL-RE-5016 Public Administration-I	<ul style="list-style-type: none"> Students will be able to understand the basics of public administration. This paper is an integral part of public services examinations. Students will be well versed with ideas of administration. 	Unit 1: Introduction	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Administrative Theories	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Principles of Organization	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Structure of Organization	Remember, Understand, Apply, Analyse, Evaluate
29	5 th	POL-RG-5016 Public Administration-I	<ul style="list-style-type: none"> Students will be able to understand the basics of public administration. This paper is an integral part of public services examinations. 	Unit 1: Introduction	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Administrative Theories	Remember, Understand, Apply, Analyse, Evaluate

			Students will be well versed with ideas of administration.	Unit 3: Principles of Organization	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Structure of Organization	Remember, Understand, Apply, Analyse, Evaluate
30	6 th	POL-SE-6014 Conflict and Peace Building	<ul style="list-style-type: none"> The course encourages the use of new information technologies and innovative ways of understanding these issues by teaching students skills of managing and resolving conflicts and building peace through techniques such as role-play, simulations, street theatre, cinema and music on the one hand and by undertaking field visits, interacting with different segments of the civil society including those affected by conflicts as well as diplomats, journalists and experts, on the other. 	Unit 1: Conflict and its concepts	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Dimensions of Conflict	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Conflict Responses: Skills and Techniques I	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Conflict Responses: Skills and Techniques II	Remember, Understand, Apply, Analyse, Evaluate
31	6 th	POL-RG-6016	<ul style="list-style-type: none"> After reading this course the students will be in a position acquaint with the different layers 	Unit 1: Personnel Administration	Remember, Understand, Apply, Analyse, Evaluate

		Public Administration –II	and structures of public administration and also to know how public administration contributes towards development. One will also be in a position to know about the principles and processes of budgeting etc.	Unit 2: Financial Administration	Remember, Understand, Apply, Analyse, Evaluate
				Unit3: Development Administration	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Citizen and Administration	Remember, Understand, Apply, Analyse, Evaluate
32	6 th	POL-RG-6016 Public Administration –II	<ul style="list-style-type: none"> After reading this course the students will be in a position acquaint with the different layers and structures of public administration and also to know how public administration contributes towards development. One will also be in a position to know about the principles and processes of budgeting etc. 	Unit 1: Personnel Administration	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Financial Administration	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Development Administration	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Citizen and Administration	Remember, Understand, Apply, Analyse, Evaluate

33	3 rd	POL-SE-3014 Parliamentary Procedures and Practices	<ul style="list-style-type: none"> To help students in understanding the practical approaches to legislative practices and procedures. To make students understand the procedures and processes related to drafting a Bill and the passage of the Bill. To enable students to have an understanding of the importance of Parliamentary Committees. To encourage students to learn about the basic functioning of Parliament. 	Unit 1: Constitutional Provisions and Kinds of Bills	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Drafting, Introductions and Readings of the Bills: Procedures and Processes	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Parliamentary Committees: Composition and Functioning	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Motions and Hours in the House	Remember, Understand, Apply, Analyse, Evaluate
34	4 th	POL-SE-4024 POL SE 4024 Citizens and Rights	<ul style="list-style-type: none"> To analyse the linkages between citizenship, law, rights and equality. To understand the measures of discrimination, justice and empowerment and the ways to protect the same. To evaluate the idea of justice and assess its relevance in context of contemporary India. 	Unit 1: Equality and non-discrimination	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Empowerment	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Redistribution, recognition and livelihood	Remember, Understand, Apply, Analyse, Evaluate

				Unit 4: Laws relating to criminal justice administration	Remember, Understand, Apply, Analyse, Evaluate
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9. a) BA (Honours) Sanskrit

SL. NO.	SEMESTER	PAPER CODE & TITLE	COURSE OUTCOMES	UNIT/ CHAPTER	BLOOM'S TAXONOMY LEVEL
1	1 st	SKT- HC-1016 Classical Sanskrit Literature (Poetry)	<ul style="list-style-type: none"> This course aims to get students acquainted with Classical Sanskrit Poetry. It intends to give an understanding of literature, through which students will be able to appreciate the development of Sanskrit Literature. The course also seeks to help students to negotiate texts independently. 	Unit 1: RAGHUVAMSAM: CANTO I (Verses 1-25) Introduction (Author and Text), Appropriateness of title, Verses 1-10 = Grammatical, Analysis, Meaning/Translation, Explanation, Content Analysis, Characteristics of Raghu clan. Verses 11-25: Grammatical analysis, Meaning/ Translation, Explanation, Role of Dilipa, Welfare of Subjects.	Understanding, Remembering and Analysis.
				Unit 2: KUMARASAMBHAVAM, CANTO-V (Verses 1-30) Introduction (Author and Text), Appropriateness of title, Background of given	Understanding, Remembering and Analysis.

				<p>contents. Text reading.</p> <p>(Verses 1-15) Grammatical Analysis, Translation and Explanation, Poetic excellence and plot.</p> <p>(Verses 16-30) Grammatical Analysis, Translation and Explanation, Penance of Parvati, Poetic excellence and plot.</p>	
				<p>Unit 3: KIRATARJUNIYAM, CANTO I</p> <p>(Verses 1-25) KIRATARJUNIYAM : Introduction(Author and Text, Appropriateness of title, Background of given contents.</p> <p>(Verses 1-2) Grammatical Analysis, Translation and Explanation, Poetic excellence, Thematic analysis.</p>	Understanding, Remembering and Analysis.
				<p>Unit 4: NITISATAKAM (Verses 1- 20)</p>	Understanding, Remembering and

				<p>Verses 1-10 Grammatical Analysis, Translation and Explanation,</p> <p>Verses 11-20 Grammatical Analysis, Translation and Explanation, Thematic analysis, Bhartihari's comments on society.</p>	Analysis.
				<p>Unit 5: ORIGIN AND DEVELOPMENT OF MAHAKAVYA AND GITIKAVYA</p> <p>Origin and development of different types of Mahakavya with special reference to Asvaghosa, Kalidasa, Bharavi, Magha, bhattacharya, Sriharsa.</p>	Understanding, Remembering and Analysis.
2	1 st	SKT-HC-1026 Critical Survey of Sanskrit Literature	<ul style="list-style-type: none"> This course aims to get students acquainted with the journey of Sanskrit Literature from Vedic literature to Purāṇa. It also intends to give an outline of different shastric traditions, through which students will be able to know the different genres of Sanskrit Literature and Śāstras. 	<p>Unit 1: VEDIC LITERATURE: <i>SAMHITA</i> (<i>Rik, Yajuh, Sama, Atharva</i>) : Time, Subject matter, religion & philosophy, social life.</p> <p><i>Brahmana, Aranyaka, Upanisad, Vedanga</i> – Brief Introduction.</p>	Understanding, Remembering and Analysis.
				<p>Unit 2: RAMAYANA: Subject-matter, Ramayana</p>	Understanding, Remembering and

				as an Adikavya, Ramayana as a source text and its cultural importance.	Analysis.
				Unit 3: MAHABHARATA : Mahabharata and its time, Development, Encyclopedic nature, as a Source, Text, Cultural importance.	Understanding, Remembering and Analysis.
				Unit 4: PURANAS: Subject –matter, characteristics, Purana’s social, cultural and historical importance with special reference to the Kalikapurana.	Understanding, Remembering and Analysis.
				Unit 5: GENERAL INTRODUCTION TO VYAKARANA, DARSANA AND SAHITYASASTRA General introduction to Vyakarana, Brief history of Vyakaranasastra. General introduction to Darsana : Major schools of Indian Philosophy- Carvaka, Buddha, Jaina, Sankhya-yoga, Nyaya-vaishesika, Purvamimansa and Uttaramimansa.	Understanding, Remembering and Analysis.

				General introduction to Poetics : Six major schools of Indian Poetics – Rasa, Alamkara, Riti, Dhvani, Vakrokti and Aucitya.	
3	2 nd	SKT-HC-2016 Classical Sanskrit Literature (Prose)	<ul style="list-style-type: none"> This course aims to acquaint students with Classical Sanskrit Prose literature. Origin and development of prose, important prose romances and fables Sanskrit are also included here for students to get acquainted with the beginnings of Sanskrit Prose literature. The course also seeks to help students negotiate texts independently. 	<p>Unit 1: SUKANASOPADESA (Ed. Prahlad Kumar):</p> <p>Introduction – Author/Text, Text up to page 116 of Prahlad Kumar up to the end of the Text.</p> <p>Society, Ayurveda and Political thoughts depicted in Sukanasopadesa, logical meaning and application of sayings: Banocchistam, Pancananbanah</p>	Understanding, Remembering and Analysis.
				<p>Unit 2: VISRUTACARITAM Upto 15th Para:</p> <p>Para 1 to 10 - Introduction – Author/Text, Text reading (Grammar, Translation and Explanation), Poetic excellence, plot, Timing of Action, Society, language and style of</p>	Understanding, Remembering and Analysis.

				<p>Dandin. Exposition of Sayings“ Dandinahpadalalityam”, “KavirdandiKavirdandinaSamsayah”</p>	
				<p>Unit 3: Origin and Development of Prose, Important Prose Romances and Fables:</p> <p>Origin and development of prose, important prose romances and fables Subandhu, Dandin, Bana, Ambikadatta Vyasa. Pancatantra, Hitopadesa, Vetalapancavimsatika, Simhasanadvatrimika, Purusapariksa, Sukasaptati.</p>	<p>Understanding, Remembering and Analysis.</p>
4	2 nd	SKT-HC-2026 Self Management InThe Gita	<ul style="list-style-type: none"> The objective of this course is to study the philosophy of self-management in the Gītā. The course seeks to help students negotiate the text independently without referring to the traditional commentaries so as to enable them to experience the richness of the text. 	<p>Unit 1: Gita: Cognitive and emotive apparatus: Hierarchy of <i>indriya</i>, <i>manas</i>, <i>buddhi</i>, and <i>atman</i> III.42; XV.7</p> <p>Role of atman – XV.7; XV.9</p> <p>Mind as a product of prakriti VII.4</p> <p>Properties of three gunas</p>	<p>Understanding, Remembering and Analysis.</p>

				and their impact on the mind- XIII.5-6; XIV.5-8, 11-13; XIV.17	
				<p>Unit 2: Gita: Controlling the Mind: Confusion and Conflict</p> <p>Nature of conflict I.1; IV.16; I.45; II.6</p> <p>Causal factors- Ignorance-II.41; <i>Indriya</i>-II.60,</p> <p>Mind- II.67; <i>Rajoguna</i> – III.36-39;XVI.21; Weakness of mind- II.3; IV.5</p> <p>Means of controlling mind Meditation-difficulties- VI.34-35;procedure VI.11-14</p> <p>Balanced life III.8; VI.16-17</p> <p>Diet control- XVII.8-10</p> <p>Physical and mental discipline –XVII.14-19, VI.36.</p> <p>Means of conflict resolution Importance of knowledge –II.52;</p>	Understanding, Remembering and Analysis.

				<p>IV.38-39; IV.42</p> <p>Clarity of <i>buddhi</i>- XVIII.30-32 Process of decision making – XVIII.63 Control over senses – II.59, 64</p> <p>Surrender of <i>kartribhava</i> – XVIII. 13-16</p> <p>Desirelessness– II.48; II.55</p>	
				<p>Unit 3:</p> <p>Gita: Self-management through devotion: Surrender of ego Abandoning frivolous debates Acquisition of moral qualities</p>	<p>Understanding, Remembering and Analysis.</p>
5	3 rd	SKT-HC-3016 Classical Sanskrit Literature (Drama)	<ul style="list-style-type: none"> This course aims to acquaint students with three most famous dramas of Sanskrit literature which represent three stages in the growth of Sanskrit drama. 	<p>Unit 1: SVAPNABASAVADATT AM of, Bhasa, Act I & Act VI</p>	<p>Understanding, Remembering and Analysis.</p>
				<p>Unit 2: ABHIJNANASAKUNTAL AM of Kalidasa, Act I & Act IV.</p>	<p>Understanding, Remembering and Analysis.</p>

				Unit 3: MUDRARAKSASAM of Visakhadatta : Act I,II & III	Understanding, Remembering and Analysis.
				Unit 4: CRITICAL SURVEY OF SANSKRIT DRAMA Sanskrit Drama : Origin and Development, Nature of Nataka, Some important Dramatists and Dramas :- Bhasa, Kalidasa, Sudraka, Visakhadatta, Sriharsa, Bhavabhuti , Bhattacharyya and their works.	Understanding, Remembering and Analysis.
6	3 rd	SKT-HC-3026 Poetics And Literary Criticism	<ul style="list-style-type: none"> The study of <i>Sāhityaśāstra</i> (Sanskrit Poetics) embraces all poetic arts and includes concepts like <i>alamkāra</i>, <i>rasa</i>, <i>rīti</i>, <i>vakrokti</i>, <i>dhvani</i>, <i>aucitya</i> etc. The entire domain of Sanskrit poetics has flourished with the topics such as definition of poetry and divisions, functions of word and meaning, theory of <i>rasa</i> and <i>alamkāra</i> (figures of speech) and <i>chandas</i> (metre), etc. This develops capacity for 	Unit 1: Introduction to Sanskrit Poetics	Understanding, Remembering and Analysis.
				Unit 2: Forms of Kavya Literature	Understanding, Remembering and Analysis.
				Unit 3: Sabda-Sakti and Rasa-sutra & Kavyadosa	Understanding, Remembering and Analysis.

			creative writing and literary appreciation.	Unit 4: Figures of Speech and Metre	Understanding, Remembering and Analysis.
7	3 rd	SKT-HC-3036 Indian Social Institutions And Polity	<ul style="list-style-type: none"> Social institutions and Indian Polity have been highlighted in the <i>Dharmaśāstra</i> literature. The aim of this course is to make the students acquainted with various aspects of social institutions and Indian polity as propounded in the ancient Sanskrit texts such as <i>Samhitās</i>, <i>Mahābhārata</i>, <i>Purāṇa</i>, Kautilya's <i>Arthaśāstra</i> and other works known as <i>Nītiśāstra</i>. 	<p>Unit 1: Indian Social Institutions Nature and Concepts</p> <p>Indian Social Institutions: Definition and Scope: Sociological definition of Social Institutions.</p> <p>Trends of Social Changes, Sources of Indian Social Institutions.</p> <p>Social Institutions and Dharmasastra Literature Dharmasastra as a special branch of studies of social institutions, sources of Dharma, Different kinds of Dharma in the sense of Social Ethics, Six kinds of Dharma in the sense of Duties.</p>	Understanding, Remembering and Analysis.
				Unit 2: Structure of Society and Values of Life Varna system and	Understanding, Remembering and Analysis.

				<p>CasteSystem</p> <p>Origin of Caste-system from Inter Caste Marriages Position of Womenin the Society.</p> <p>Social Values of Life.</p>	
				<p>Unit 3: INDIAN POLITY: ORIGIN AND DEVELOPMENT</p> <p>Initial stage of Indian Polity from Vedicperiod to Buddhist period.</p> <p>Relevance of Gandhian Thought in Modern period with special reference to Satyagrahaphilosophy.</p>	<p>Understanding, Remembering and Analysis.</p>
				<p>Unit 4: CARDINAL THEORIES AND THINKERS OF INDIAN POLITY</p> <p><i>Saptanga</i> Theory, <i>Mandala</i> Theory, <i>Saragunya</i> Policy of War and Peace, <i>CaturvidhaUpaya</i> for balancing the power of State, Three types of State Power, Important</p>	<p>Understanding, Remembering and Analysis.</p>

				Thinkers on Indian Polity.	
8	3 rd	SKT-SE-3014 Acting And Script Writing	<ul style="list-style-type: none"> The acting is connected with the practical aspect of the play and depends on actor while script writing is closely related with society and this paper aims at the teaching the theoretical aspect of this art. The training of composition and presentation of drama can further enhance one's natural talent. This paper deals with the rules of presentation of play (acting) and dramatic composition script writing) and aims at sharpening the dramatic talent of the students. 	<p>Unit 1: Abhinaya (Acting)- Persons competent for presentation, Assignment of Role, Kinds of Roles.</p> <p>Unit 2: Script Writing- Types of dramatic production, Dialogue Writing: Kinds of Dialogue.</p>	<p>Understanding, Remembering and Analysis.</p> <p>Understanding, Remembering and Analysis.</p>
9	4 th	SKT-HC-4016 Indian Epigraphy, Paleography and Chronology	<ul style="list-style-type: none"> This course aims to acquaint the students with the epigraphical journey in Sanskrit, the only source which directly reflects the society, politics, geography and economy of the time. The course also seeks to help students to know the different styles of Sanskrit writings. 	<p>Unit 1: EPIGRAPHY: Introduction to Epigraphy and Types of Inscriptions Importance of Indian Inscriptions in the reconstruction of Ancient History and Culture History of Epigraphical Studies in India History of Decipherment of Ancient Indian Scripts (Contribution of Scholars in the field of epigraphy) : Fleet, Cunningham, Princep, Bulher, Ojha, D.</p>	<p>Understanding, Remembering and Analysis.</p>

				C. Sircar.	
				Unit 2: PALEOGRAPHY: Antiquity of the Art of Writing Writing Materials, Inscribers and Library Introduction to Ancient Indian Scripts.	Understanding, Remembering and Analysis.
				Unit 3: Study of selected inscriptions: Asoka's Girnara Rock Edict- 1 Asoka's Sarnatha Pillar Edict Girnara Inscription of Rudradaman Dubi Copper Plates of Bhaskaravarman Parbatiya Copper Plates of Vanamalavarmadeva	Understanding, Remembering and Analysis.
				Unit 4: CHRONOLOGY: General Introduction to	Understanding, Remembering and

				<p>Ancient Indian Chronology System of Dating the Inscriptions (Chronograms)</p> <p>Main Eras used in Inscriptions – Vikrama Era, Saka Era and Gupta Era</p>	Analysis.
10	4 th	SKT-HC-4026 Modern Sanskrit Literature	<ul style="list-style-type: none"> The purpose of this course is to expose students to the rich & profound tradition of modern creative writing in Sanskrit, enriched by new genres of writing. 	<p>Unit 1: Mahakavya and Charitakavya: Svatantryasambhavam, Canto 2, verses 1-45 Sankaradevacarita of (MaheswarHazarika) Chapter- 5, Manikancanamilanam</p>	Understanding, Remembering and Analysis.
				<p>Unit 2: Gadya and Rupaka: Sataparvika (AbhirajaRajendraMishra) Sardulasakatam (Virendra KumarBhattacharya)</p>	Understanding, Remembering and Analysis.
				<p>Unit 3: Gitikavya and Other genres: Ketakikavya Taranga, I Srutipasastimanjari by Mukunda Madhava Sarma: Anundoram Barooah, Krisnakanta Handique, Sankaradev, Harshdev</p>	Understanding, Remembering and Analysis.

				Madhava Haiku	
				Unit 4: General Survey: Pandita Kshama Rao, P.K.Narayana Pillai, S.B. Varnekar, Parmanand Shastri, Reva Prasad Dwivedi Bhavadeva Bhagavati, Monoranjana Shastri, Biswanarayan Shastri, M. M. Sharma, Haridas Siddhantavagish, MulaShankar M. Yajnika, Mahalinga Shastri, Leela Rao Dayal, Yatindra Vimal Chowdhury, Virendra Kumar	Understanding, Remembering and Analysis.

				Bhattacharya	
11	4 th	SKT-HC-4036 Sanskrit and World Literature	<ul style="list-style-type: none"> This course is aimed to provide information to students about the spread & influence of Sanskrit literature and culture through the ages in various parts of the world in medieval & modern times. 	Unit 1: Survey of Sanskrit Literature in the World Unit 2: Upanisads and Gita in the World Literature Unit 3: Sanskrit Fables in the World Literature Unit 4: Ramayana and Mahabharata in South East Asian Countries Unit 5: Kalidasa's Literature in World Literature Unit 6: Sanskrit Studies across the World	Understanding, Remembering and Analysis. Understanding, Remembering and Analysis. Understanding, Remembering and Analysis. Understanding, Remembering and Analysis. Understanding, Remembering and Analysis. Understanding, Remembering and Analysis.
12	4 th	SKT-SE-4014 Sanskrit Metre and Music	<ul style="list-style-type: none"> The objective of this course to learn Sanskrit metre for analysis and lyrical techniques. Students 	Unit 1: Brief Introduction to Chandasastra	Understanding, Remembering, Analysis and Application

			will get the complete information regarding selected Vedic and Classical metres with lyrical techniques.	Unit 2: Classification and Elements of Sanskrit Metre :Syllabic verse, Syllabo-quantitative verse, Quantitative verse, Syllables (laghu, guru,), Guna, Feet	Understanding, Remembering, Analysis and Application
				Unit 3: Analysis of Selected Vedic Metre as per Chandamanjari and their Lyrical Methods: Definition, Example, Analysis and Lyrical Methods of selected Metres	Understanding, Remembering, Analysis and Application
				Unit 4: Analysis of Selected Classical Metres as per Chandamanjari and their Lyrical Methods: Definition, Example, Analysis and Lyrical Methods of selected Metres	Understanding, Remembering, Analysis and Application
				Unit 1: SAMHITA AND	Understanding,

13	5 th	SKT-HC-5016 Vedic Literature	<ul style="list-style-type: none"> This course on Vedic Literature aims to introduce various types of vedic texts . Students will also be able to read one <i>Upanisad</i> namely <i>Mundaka</i> where primary Vedanta-view is propounded. 	BRAHMANA : Rigveda, Yajurveda, Atharvaveda Satapathabrahmana	Remembering and Analysis.
				Unit 2: VEDIC GRAMMAR : Declensions, Subjunctive Mood, Gerunds, Vedic Accent and Padapatha	Understanding, Remembering and Analysis.
				Unit 3: MUNDAKOPANISAD : 1.1 -3.2	Understanding, Remembering and Analysis.
14	5 th	SKT-HC-5026 Sanskrit Grammar	<ul style="list-style-type: none"> To acquaint the students with general Sanskrit Grammar. 	Unit 1: General Introduction to Vyakarana, Sivasutra, Paribhasa, Sandhi	Understanding, Remembering and Analysis.
				Unit 2: Natvavidhi & Satvavidhi	Understanding, Remembering and Analysis.
				Unit 3: Declention , Conjugation and Roots	Understanding, Remembering and Analysis.
				Unit 4: Karaka	Understanding,

				Prakaranam, Samasa Prakaranam	Remembering and Analysis.
15	5 th	SKT-HE-5026 Theatre and Dramaturgy	<ul style="list-style-type: none"> Being audio-visual drama is considered to be the best amongst all forms of arts. The history of theatre in India is very old, the glimpses of which can be traced in the hymns of the Rigveda. The dramaturgy was later developed by the Bharatamuni. The objectives of this curriculum are to identify the beauty of drama and to introduce classical aspects of development of Indian theatre among the students. 	Unit 1: Theatre : Types and Construction.	Understanding, Remembering, Analysis and Application
				Unit 2: Drama : Vastu, Neta and Rasa	Understanding, Remembering, Analysis and Application
				UNIT-III : Tradition and History of Indian Theatre .	Understanding, Remembering, Analysis and Application
16	5 th	SKT-HE-5046 Project / Dissertation	<ul style="list-style-type: none"> This course aims to understand the students acquainted with the Research Methodology. 		Application and Presentation
17	6 th	SKT- HC-6016 Ontology and Epistemology	<ul style="list-style-type: none"> The Course aims to get the students acquainted with the cardinal principles of the Nyayavaishesika Philosophy through the Tarkasamgraha and to enable students to handle philosophical texts in Sanskrit. 	Unit 1:, Essentials of Indian Philosophy	Understanding, Remembering and Analysis.
				Unit 2: Ontology (Based on Tarkasamgraha)	Understanding, Remembering and Analysis.
				Unit 3: Epistemology (Based on,Tarkasamgraha)	Understanding, Remembering and Analysis.

18	6 th	SKT- HC-6026 Sanskrit Composition and Communication	<ul style="list-style-type: none"> This course aims to get the students acquainted with comparative Philology and its relation with Sanskrit language. It will also make the students acquire knowledge about the historical development of Sanskrit from Indo-European family of languages. 	Unit 1: Vibhaktiyartha, Voice and Kṛt	Understanding, Remembering and Analysis.
				Unit 2: Translation and Communication	Understanding, Remembering and Analysis.
				Unit 3: Essay	Understanding, Remembering and Analysis.
19	6 th	SKT-HE-6016 Fundamentals of Ayurveda	<ul style="list-style-type: none"> This course aims to understand the Ayurveda. The Ayurveda is a traditional Indian System of healthcare that has been traced back early 5000 BCE. Through the classroom lectures and discussion, this course will be introduced among the students. 	Unit 1: Introduction of Āyurveda	Understanding, Remembering and Analysis.
				Unit 2: Carakasamhitā – (Sūtra-sthānam	Understanding, Remembering and Analysis.
				Unit 3: Bhaisajyaratnavali	Understanding, Remembering and Analysis.
20	6 th	SKT-HE-6036 Kamarupa School of Dharmasastra	<ul style="list-style-type: none"> This course leads to the knowledge of Dharmasastras with ancient Indian tradition. The Kamarupa School is also introduced so that students can get the ritual heritage of the Dharmasastra of Assam and 	Unit 1: Introduction to Dharmasastras in Assam Kamarupa School of Dharmasastra	Understanding, Remembering and Analysis.
				Unit 2: Kamarupa School	Understanding, Remembering and

			other items.	of Dharmasastra	Analysis.
				Unit 3: Tirthakaumudi of Pitambarasiddhantava gisha	Understanding, Remembering and Analysis.

9. b) BA (Regular, Generic) Sanskrit

21	1 st	SKT- HG-1016 SKT- RC-1016 Basic Sanskrit	<ul style="list-style-type: none"> This is an elementary course in Sanskrit language designed for students who wish to learn Sanskrit from the very beginning. Essential Sanskrit grammar will be introduced (without reference to Panini's sutras) through the multiple example method with emphasis on students constructing themselves sentences. 	Part 1: Grammar and composition	Understanding, Remembering and Analysis.
				Part 2: Literature	Understanding, Remembering and Analysis
22	2 nd	SKT- HG-2016 SKT- RC-2016 Indian Culture and Social Issues	<ul style="list-style-type: none"> This paper is designed to introduce nuances of Indian culture to students and to show how cultural traditions have evolved. The paper also engages them in debates about certain significant socio-cultural issues. 	Culture in a multi-cultural society Cultural roots of India	Understanding, Remembering and Analysis.
23	3 rd	SKT- HG-3016	<ul style="list-style-type: none"> Āyurveda is a traditional Indian system of healthcare 	Introduction to Indian Medicine System:	Understanding, Remembering and

		SKT- RC-3016 Basic Principles of Indian Medicine System (Ayurveda)	that has been traced back to as early as 5,000 BCE. This course will introduce students to the theory of Āyurveda. The major objective is to understand the basic principles and concepts of preventive medicine and health care, diet and nutrition, usage of commonly used spices and herbs	Āyurveda Basic Principles of Āyurveda Dietetics, Nutrition and Treatments in Āyurveda Important Medicinal Plants and their based on Āyurveda and an outline of Āyurvedic therapeutic procedures in Āyurveda.	Application.
24	4 th	SKT- HG-4016 SKT- RC-4016 Fundamentals of Indian Philosophy	<ul style="list-style-type: none"> This course aims to get the students acquainted with the basic approach to study Indian philosophy. It also intends to give an elementary understanding of Indian Philosophy and to enable students to handle philosophical texts in Sanskrit easily. 	General Introduction Schools of Indian Philosophy Problems in Indian Philosophy	Understanding, Remembering and Analysis.
25	5 th	SKT- RE-5026 Fundamentals of Ayurveda	<ul style="list-style-type: none"> This course aims to understand the Ayurveda. The Ayurveda is a traditional Indian System of healthcare that has been traced back early 5000 BCE. Through the classroom lectures and discussion, this course will be introduce among the students. 	Unit 1: Introduction of Āyurveda Unit 2: Carakasamhitā – (Sūtra- sthānam) Unit 3: Bhaisajyaratnavali	Understanding, Remembering and Analysis Understanding, Remembering and Analysis Understanding, Remembering and Analysis
				Unit 1:	Understanding,

26	6 th	<p style="text-align: center;">SKT- RE-6026</p> <p style="text-align: center;">Kamarupa School of Dharmastra</p>	<ul style="list-style-type: none"> This course leads to the knowledge of Dharmasastras with ancient Indian tradition. The Kamrupa School is also introduced so that students can get the ritual heritage of the Dharmasastra of Assam and other items. 	<p>Introduction to Dharmasastras in Assam Kamarupa School of Dharmasastra</p>	<p>Remembering and Analysis.</p>
				<p>Unit 2: Kamarupa School of Dharmasastra</p>	<p>Understanding, Remembering and Analysis</p>
				<p>Unit 3: Tirthakaumudi of Pitambarasiddha ntavagisha</p>	<p>Understanding, Remembering and Analysis</p>

10. a) BSc (Honours) Botany

SL.NO.	SEMESTER	COURSE NAME AND CODE	COURSE OUTCOMES	UNIT/CHAPTER	BLOOM'S TAXONOMY LEVELS
1	1 st	BOT-HC-1016 Phycology and Microbiology	<ul style="list-style-type: none"> • Understand the diversity among Algae. • Know the systematic, morphology and structure, of Algae. • Understand the life cycle pattern of Algae. • Understand the useful and harmful activities of Algae. • Understand the Microbial world and their diversity • Know the Economic Importance of Microbes • Know the harmful effects of microbes • Know the role of microbes in Research activities 	Unit 1: Introduction to microbial world	Knowledge, Understanding, application
				Unit 2: Viruses	Knowledge, Understanding
				Unit 3: Bacteria	Knowledge, Understanding, apply, create
				Unit 4: Algae	Knowledge, Understanding, apply, create
				Unit 5: Cyanophyta and Xanthophyta	Knowledge, Understanding, apply, analyze, create
				Unit 6: Chlorophyta, Charophyta and Bacillariophyta	Knowledge, understanding, apply, create

				Unit 7: Pheophyta and Rhodophyta	Knowledge, understanding, apply, create
2	1 st	BOT-HC-1026 Biomolecules and Cell biology	<ul style="list-style-type: none"> • Know the chemical nature of biomolecules. • Understand the different types of interaction in Biomolecules. • Structure and general features of enzymes. • Concept of enzyme activity and enzyme inhibition. • Understand the Biochemical nature of cell and cell organelles • Know about the cell divisions: mitosis & meiosis • know the endomembrane system and protein transport 	Unit 1: Biomolecules	Knowledge, understanding, application
				Unit 2: Bioenergetics	Knowledge, understanding
				Unit 3: Enzymes	Knowledge, understanding, application
				Unit 4: The cell	Knowledge, understanding, application, creation
				Unit 5: Cell wall and plasma membrane	Knowledge, understanding, application.
				Unit 6: Cell organelles	Knowledge, understanding, application, creation
				Unit 7: Cell division	Knowledge, understanding

3	2 nd	BOT-HC-2016 Mycology and Phytopathology	<ul style="list-style-type: none"> • Understand the Biodiversity of Fungi and understand the life cycle pattern of Fungi • Know the Economic Importance of Fungi • Know the terminologies in plant pathology. • Understand the scope and importance of Plant Pathology. • Know the prevention and control measures of plant diseases and its effect on economy of crops. 	Unit 1: Introduction to Fungi	Knowledge, understanding, application, analysis, creation
				Unit 2: Mastigomycotina (Chytridiomycetes to Oomycetes)	knowledge, understanding
				Unit 3: Zygomycotina	knowledge, understanding
				Unit 4: Ascomycotina	knowledge, understanding
				Unit 5: Basidiomycotina	knowledge, understanding
				Unit 6: Deuteromycotina (Fungi imperfecti)	knowledge, understanding
				Unit 7: Allied fungi- Myxomycota	knowledge, understanding
				Unit 8: Symbiotic association	knowledge, understanding, application, creation

				Unit 9: Applied Mycology	Knowledge, understanding, application, creation
				Unit 10: Phytopathology	Knowledge, understanding, application, analysis
4	2 nd	BOT-HC-2026 Archegoniate	<ul style="list-style-type: none"> • Understand the morphological diversity of Bryophytes. • Understand the economical and ecological importance of the Bryophytes. • Know the taxonomic position, occurrence, thallus structure, reproduction of Bryophytes. • Understand the morphological diversity of Pteridophytes. • Understand the economic and ecological importance of the Pteridophytes 	Unit 1: Introduction	Knowledge, understanding, application, analysis
				Unit 2: Bryophytes	Knowledge, understanding, application, analysis
				Unit 3: Type studies- Bryophytes	Knowledge, understanding, application, analysis, creation
				Unit 4: Pteridophytes	Knowledge, understanding,
				Unit 5: Type studies- Pteridophytes	Knowledge, understanding, application,

			<ul style="list-style-type: none"> • Know the taxonomic position, occurrence, thallus structure, reproduction of Pteridophytes. • Know the evolution of Bryophytes and Pteridophytes. 		analysis, creation
				Unit 6: Gymnosperms	Knowledge, understanding, application, analysis, creation
5	3 rd	BOT-HC-3016 Morphology and Anatomy of Angiosperms	<ul style="list-style-type: none"> • Understand plant communities and ecological adaptations in plants. • Understand the tissues and tissue systems of Plants • Know the wood anatomy • Know the anatomical difference of dicot and monocot • Know the origin, development, arrangement and diversity in size and shape of leaves. 	Unit 1: Morphology	Knowledge, understanding, application
				Unit 2: Introduction and scope of plant anatomy	Knowledge, understanding
				Unit 3: Structure and development of plant body	Knowledge, understanding
				Unit 4: Tissues	Knowledge, understanding, application, analysis
				Unit 5: Apical meristems	Knowledge, application
				Unit 6: Vascular cambium and wood	Knowledge, application
				Unit 7: Adaptive and	Knowledge,

				protective systems	application
6	3 rd	BOT-HC-3026 Economic Botany	<ul style="list-style-type: none"> • Know the major introduced plant species, concept of centre of origin and their importance • Know about crop domestication and loss of genetic diversity • Understand the evolution of new crops /varieties • Know about the germplasm diversity • Understand the economic importance of various plant species. 	Unit 1: Origin of cultivated plants	Knowledge, application
				Unit 2: Cereals	Knowledge, application
				Unit 3: Legumes	Knowledge, application
				Unit 4: Sources of sugars and Starch	Knowledge, application
				Unit 5: Spices	Knowledge, application
				Unit 6: Beverages	Knowledge, application
				Unit 7: Sources of oils and fats	Knowledge, application
				Unit 8: Natural rubber	Knowledge, application
				Unit 9: Drug-yielding plants	Knowledge, application

				Unit 10: Timber plants	Knowledge, understanding, application, creation
				Unit 11: Fibers	Knowledge, understanding, application
7	3 rd	BOT-HC-3036 Genetics	<ul style="list-style-type: none"> • Know about the genomic organization or living organisms, study of genes genome, chromosome etc. • Gain knowledge on Mendel's genetics and its extensions • Know about variation in chromosome number and structure • Understand about population and evolutionary genetics 	Unit 1: Mendelian genetics and its extension	Knowledge, understanding, application
				Unit 2: Extrachromosomal Inheritance	Knowledge, understanding, application
				Unit 3: Linkage, Crossing over & chromosome mapping	Knowledge, understanding, application
				Unit 4: Variation in chromosome number and structure	Knowledge, understanding, application
				Unit 5: Gene Mutations	Knowledge, understanding,

					application
				Unit 6: Fine structure of gene	Knowledge, understanding, application
				Unit 7: Population and evolutionary genetics	Knowledge, understanding, application
8	3 rd	BOT-SE-3014 Biofertilizers (Sec I)	<ul style="list-style-type: none"> To know about the microbes used as biofertilizers. Know the method of isolation and multiplication of different microorganisms. To gain knowledge on Cyanobacteria, Azolla etc. and their use in rice cultivation. Knowledge about mycorrhizal associatin, their taxonomy, their influence on growth and yield of crop plants. Knowledge about green manuring and organic fertilizer; recycling of bio-degradable and other wastes; vermicomposting. 	Unit 1: General account about microbes used as biofertilizers	Knowledge, understanding, application
				Unit 2: Azospirillum and Azotobacter	Knowledge, understanding,
				Unit 3: Cyanobacteria, Azolla and Anabaena	Knowledge, understanding, application
				Unit 4: Mycorrhizal association	Knowledge, understanding, application
				Unit 5: Organic farming	Knowledge, understanding, application

9	4 th	BOT-HC-4016 Molecular Biology	<ul style="list-style-type: none"> • Gain knowledge about the mechanism of DNA replication. • Gain knowledge of transcription in prokaryotes and eukaryotes. • Gain knowledge of Processing and modification of RNA. • Gain knowledge of protein synthesis, its modification and its involvement in formation of polypeptides. 	Unit 1: Nucleic Acids: Carriers of genetic information	Knowledge, understanding, application
				Unit 2: The structure of DNA and RNA/ Genetic Material	Knowledge, understanding, application
				Unit 3: The replication of DNA	Knowledge, understanding, application
				Unit 4: Central Dogma and Genetic Code	Knowledge, understanding, application
				Unit 5: Transcription	Knowledge, understanding, application
				Unit 6: Processing and modification of RNA	Knowledge, understanding, application
				Unit 7: Translation	Knowledge, understanding, application
10	4 th	BOT-HC-4026	<ul style="list-style-type: none"> • Understands the inter- 	Unit 1: Introduction	Knowledge, understanding,

		Plant Ecology and Phytogeography	relationship between the living world and environment		application
			<ul style="list-style-type: none"> • Know the soil profile and role of climate in soil development • Understand the concept of ecology and its specification • Understands Ecosystem and its components • Understands the principles, endemism, biomes and phytogeographical divisions of India 	Unit 2: Soil	Knowledge, understanding, application
				Unit 3: Water	Knowledge, understanding, application
				Unit 4: Adaptation of plants to various env. factors	Knowledge, understanding, application
				Unit 5: Biotic interactions	Knowledge, understanding, application
				Unit 6: Population Ecology	Knowledge, understanding
				Unit 7: Plant communities	Knowledge, understanding, application
				Unit 8: Ecosystems	Knowledge, understanding
				Unit 9: Functional aspects of ecosystem	Knowledge, understanding

				Unit 10: Phytogeography	Knowledge, understanding
11	4 th	BOT-HC-4036 Plant Systematics	<ul style="list-style-type: none"> Gain knowledge of plant identification, concept of classification, principle and rules of nomenclature Gain knowledge of origin and evolution of angiosperm and their evolutionary relationship Know biometrics, numerical taxonomy and cladistics Know the history of plant classification. 	Unit 1: Significance of plant systematics	Knowledge, understanding
				Unit 2: Botanical nomenclature	Knowledge, understanding
				Unit 3: Systems of classification	Knowledge, understanding
				Unit 4: Numerical taxonomy and cladistics	Knowledge, understanding
				Unit 5: Phylogeny of Angiosperms	Knowledge, understanding
				Unit 6: Angiospermic Families	Knowledge, understanding
12	4 th	BOT-SE-4024 Floriculture (Sec-I)	<ul style="list-style-type: none"> To know the history of gardening, its importance and scope. All about nursery practices., ornamental plants, pot cultivation, indoor gardening, Bonsai. Various garden designs, water 	Unit 1: Introduction	Knowledge, understanding
				Unit 2: Nursery Management and Routine Garden Operations	Knowledge, understanding, application
				Unit 3: Ornamental Plants	Knowledge,

			<p>garden.</p> <ul style="list-style-type: none"> • Knowledge of landscaping; commercial floriculture. • Disease and pest control of ornamental plants. 		<p>understanding, application</p>
				Unit 4: Principles of garden design	Knowledge, understanding
				Unit 5: Landscaping places of public interest	Knowledge, understanding
				Unit 6: Commercial floriculture	Knowledge, understanding, application
				Unit 7: Diseases and pests of ornamental plants	Knowledge, understanding, application
13	5 th	BOT-HC-5016 Reproductive Biology of Angiosperms	<ul style="list-style-type: none"> • Gain knowledge of reproductive development of Angiospermic plant • Understand the pollination and fertilization mechanism • Gain knowledge embryo, endosperm, seed, structure and their development 	Unit 1: Introduction	Knowledge, understanding, application
				Unit 2: Reproductive development	Knowledge, understanding,
				Unit 3: Anther and pollen biology	Knowledge, understanding
				Unit 4: Ovule	Knowledge, understanding

			<ul style="list-style-type: none"> Know about apomixes and polyembryony 	Unit 5: Pollination and fertilization	Knowledge, understanding
				Unit 6: Self-incompatibility	Knowledge, understanding
				Unit 7: Embryo, endospermand seed	Knowledge, understanding
				Unit 8: Polyembryony and apomixis	Knowledge, understanding
14	5 th	BOT-HC-5026 Plant Physiology	<ul style="list-style-type: none"> Gain knowledge of Plant waterrelationship Gain knowledge of mineral nutrition, nutrient uptake and translocation Gain knowledge of plant growth regulators, Physiology of flowerings Gain knowledge of cytochromes and phototropins 	Unit 1: Plant water relations	Knowledge, understanding
				Unit 2: Mineral Nutrition	Knowledge, understanding, application
				Unit 3: Nutrient uptake	Knowledge, understanding
				Unit 4: Translocation in the phloem	Knowledge, understanding, application
				Unit 5: Plant growth regulators	Knowledge, understanding, application

				Unit 6: Physiology of flowering	Knowledge, understanding
				Unit 7: Phytochrome,	Knowledge, understanding
15	5 th	BOT-HE-5026 Horticultural practices and Post-Harvest Technology	<ul style="list-style-type: none"> • Know about ornamental plants, fruit and vegetable crops. • To know horticultural techniques. • Knowledge of landscaping and garden design, floriculture. • Importance of post-harvest technology in horticultural crops, preservation and processing. • Knowledge of field and post harvest diseases, crop sanitation, IPM strategies, quarantine practices. • Conservation of germplasm, role of micropropagation, tissue culture, IPR issues. • Field trip for practical knowledge. 	Unit 1: Introduction	Knowledge, understanding
				Unit 2: Ornamental plants	Knowledge, understanding, application
				Unit 3: Fruit and Vegetable crops	Knowledge, understanding, application
				Unit 4: Horticultural techniques	Knowledge, understanding, application
				Unit 5: Landscaping and garden design	Knowledge, understanding, application
				Unit 6: Floriculture	Knowledge, understanding, Application
				Unit 7: Post-harvest	Knowledge,

				technology	understanding, application
				Unit 8: Disease control and management	Knowledge, understanding, application
				Unit 9: Horticultural crops –conservation and management	Knowledge, understanding, application
				Unit 10: Field Trip	Knowledge, understanding, application, creation
16	6 th	BOT-HC-6016 Plant Metabolism	<ul style="list-style-type: none"> • Understand the concept of Metabolism • Gain knowledge of mechanism of photosynthesis, respiration, ATP synthesis. • Gain knowledge of Metabolisms of Carbohydrate, Lipid 	Unit 1: Concept of metabolism	Knowledge, understanding
				Unit 2: Carbon assimilation	Knowledge, understanding
				Unit 3: Carbohydrate metabolism	Knowledge, understanding
				Unit 4: Carbon oxidation	Knowledge, understanding
				Unit 5: ATP-Synthesis	Knowledge, understanding

				Unit 6: Lipid Metabolism	Knowledge, understanding
				Unit 7: Nitrogen Metabolism	Knowledge, understanding
				Unit 8: Mechanism of signaltransduction	Knowledge, understanding
17	6 th	BOT-HC-6026 Plant Biotechnology	<ul style="list-style-type: none"> • Understand the method, utilization and importance of Plant Tissue culture. • Gain knowledge of DNA technology • Gene cloning and method of gene transfer. • Gain knowledge on application of Biotechnology 	Unit 1: Plant Tissue Culture	Knowledge, understanding, application
				Unit 2: Recombinant DNA technology	Knowledge, understanding
				Unit 3: Gene cloning	Knowledge, understanding
				Unit 4: Methods of gene transfer	Knowledge, understanding
				Unit 5: Applications of biotechnology	Knowledge, understanding, application

18	6 th	BOT-HE-6016 Industrial and environmental Microbiology	<ul style="list-style-type: none"> • Knowledge of different types of fermentation. • Microbes involved, media used, conditions required for fermentation, production of different types of enzymes, acids, antibiotics. • Microbes in industrial application. • Process of isolation of microbes from soil, air and water. • Use of microbes in agriculture. 	Unit 1: Scope of microbes in industry and environment	Knowledge, understanding, application
				Unit 2: Bioreactors/ Fermenters and fermentation processes	Knowledge, understanding, application, creation.
				Unit 3: Microbial production of industrial products	Knowledge, understanding
				Unit 4: Microbial enzymes of industrial interest and enzyme immobilisation	Knowledge, understanding,
				Unit 5: Microbes and quality of environment	Knowledge, understanding
				Unit 6: Microbial flora of water	Knowledge, understanding
				Unit 7: Microbes in agriculture and remediation of contaminated soils.	Knowledge, understanding, application
19	6 th	BOT-HE-6026	<ul style="list-style-type: none"> • Knowledge of microscopy, 	Unit 1: Imaging and related techniques	Knowledge, understanding

		<p>Analytical Techniques in Plant Science</p>	<p>centrifugation, radioisotops etc.</p> <ul style="list-style-type: none"> • Use of spectrophotometry in biological research. • Different types of chromatography. • X-ray diffraction, Electrophoresis, AGE, PAGE, SDS-PAGE etc. • Knowledge of biostatistics. 	<p>Unit 2: Cell fractionation</p>	<p>Knowledge, understanding, application, analysis</p>
				<p>Unit 3: Radioisotopes</p>	<p>Knowledge, understanding</p>
				<p>Unit 4: Spectrophotometry</p>	<p>Knowledge, understanding, application, analysis.</p>
				<p>Unit 5: Chromatography</p>	<p>Knowledge, understanding, application, analysis.</p>
				<p>Unit 6: Characterization of proteins and nucleic acids</p>	<p>Knowledge, understanding, application, analysis.</p>
				<p>Unit 7: Biostatistics</p>	<p>Knowledge, understanding, application, analysis</p>

10. b) BSc (Regular, Generic) Botany

20	1 st	BOT-RC-1016 Biodiversity (Microbes, Algae, Fungi and Archegoniate)	<ul style="list-style-type: none"> • Understand the basic knowledge of Algae, fungi and archegoniate. • Understand the economic and ecological importance. • Understand the microbial world. 	Unit 1: Microbes	Knowledge, understanding
				Unit 2: Algae	Knowledge, understanding, application, analysis
				Unit 3: Fungi	Knowledge, understanding
				Unit 4: Introduction to Archegoniate	Knowledge, understanding, application, analysis.
				Unit 5: Bryophytes	Knowledge, understanding, application, analysis.
				Unit 6: Pteridophytes	Knowledge, understanding, application, analysis.
				Unit 7: Gymnosperms	Knowledge, understanding, application, analysis
21	2 nd	BOT-RC-2016 Plant Ecology and Taxonomy	<ul style="list-style-type: none"> • Understands the inter-relationship between the king world and environment • Know the soil profile and role of climate in soil development • Understand the concept of ecology and its specification • Understands Ecosystem and 	Unit 1: Introduction	Knowledge, understanding, application
				Unit 2: Ecological factors	Knowledge, understanding,
				Unit 3: Plant communities	Knowledge, understanding
				Unit 4: Ecosystem	Knowledge, understanding
				Unit 5: Phytogeography	Knowledge, understanding
				Unit 6: Introduction to plant taxonomy	Knowledge, understanding
				Unit 7: Identification	Knowledge, understanding

			<p>its components</p> <ul style="list-style-type: none"> Understands the principles, endemism, biomes and phytogeographical divisions of India 	Unit 8: Taxonomic evidences from palynology, cytology, phytochemistry and molecular data	Knowledge, understanding
				Unit 9: Taxonomic hierarchy	Knowledge, understanding
				Unit 10: Botanical nomenclature	Knowledge, understanding, application
				Unit 11: Classification	Knowledge, understanding
				Unit 12: Biometrics, numerical taxonomy and cladistics	Knowledge, understanding, application
22	3 rd	BOT-RC-3016 Plant Physiology and Metabolism	<ul style="list-style-type: none"> Gain knowledge of Plant water relationship Gain knowledge of mineral nutrition, nutrient uptake and translocation Gain knowledge of plant growth regulators, Physiology of flowerings Gain knowledge of cryptochromes and phototropins 	Unit 1: Plant-water relations	Knowledge, understanding, application
				Unit 2: Mineral nutrition	Knowledge, understanding
				Unit 3: Translocation in phloem	Knowledge, understanding, application
				Unit 4: Photosynthesis	Knowledge, understanding, application
				Unit 5: Respiration	Knowledge, understanding, application
				Unit 6: Enzymes	Knowledge, understanding, application
				Unit 7: Nitrogen metabolism	Knowledge, understanding

				Unit 8: Plant growth regulators	Knowledge, understanding
				Unit 9: Plant response to light and temperature	Knowledge, understanding, application
23	4 th	BOT-RC-4016 Plant Anatomy and Embryology	<ul style="list-style-type: none"> • Understand the tissues and tissue systems of Plants • Know the wood anatomy • Know the anatomical difference of dicot and monocot • Know the origin, development, arrangement and diversity in size and shape of leaves. 	Unit 1: Meristematic and permanent tissues	Knowledge, understanding, application
				Unit 2: Organs	Knowledge, understanding,
				Unit 3: Secondary Growth	Knowledge, understanding
				Unit 4: Adaptive and protective systems	Knowledge, understanding
				Unit 5: Structural organization of flower	Knowledge, understanding
				Unit 6: Pollination and fertilization	Knowledge, understanding
				Unit 7: Embryo and endosperm	Knowledge, understanding
				Unit 8: Apomixis and polyembryony	Knowledge, understanding
24	5 th	BOT-RE-5016 Cell and Molecular Biology	<ul style="list-style-type: none"> • Gain knowledge about the mechanism of DNA replication. • Gain knowledge of 	Unit 1: Techniques in Biology	Knowledge, understanding, application
				Unit 2 : Cell as a unit of Life	Knowledge, understanding,
				Unit 3 : Cell Organelles	Knowledge, understanding

			<p>transcription in prokaryotes and eukaryotes.</p> <ul style="list-style-type: none"> Gain knowledge of Processing and modification of RNA. Gain knowledge of protein synthesis, its modification and its involvement in formation of polypeptides 	<p>Unit 4 : Cell Membrane and Cell Wall</p>	<p>Knowledge, understanding</p>
				<p>Unit 5 : Cell Cycle</p>	<p>Knowledge, understanding</p>
				<p>Unit 6 : Genetic material</p>	<p>Knowledge, understanding</p>
				<p>Unit 7 : Transcription (Prokaryotes and Eukaryotes)</p>	<p>Knowledge, understanding</p>
				<p>Unit 8 : Regulation of gene expression</p>	<p>Knowledge, understanding</p>
25	5 th	<p>BOT-RE-5026 Economic Botany and Biotechnology</p>	<ul style="list-style-type: none"> Know the major introduced plant species, concept of center of origin and their importance Know basic concepts of biotechnology and its different aspects. 	<p>Unit 1: Origin of Cultivated Plants</p>	<p>Knowledge, understanding, application</p>
				<p>Unit 2: Cereals</p>	<p>Knowledge, understanding, application</p>
				<p>Unit 3: Legumes</p>	<p>Knowledge, understanding, application</p>
				<p>Unit 4: Spices</p>	<p>Knowledge, understanding, application</p>
				<p>Unit 5: Beverages</p>	<p>Knowledge, understanding, application</p>
				<p>Unit 6: Oils and Fats</p>	<p>Knowledge, understanding, application</p>
				<p>Unit 7: Fiber Yielding Plants</p>	<p>Knowledge, understanding, application</p>

				Unit 8: Introduction to biotechnology	Knowledge, understanding, application
				Unit 9: Plant tissue culture	Knowledge, understanding,
				Unit 10: Recombinant DNA Techniques	Knowledge, application
				Unit 11: Bioinformatics	Knowledge, application
				Unit 12: Applications of Bioinformatics	Knowledge, application
26	5 th	BOT-RE-5036 Genetics and Plant Breeding	<ul style="list-style-type: none"> • Know about the genomic organization or living organisms, study of genes genome, chromosome etc. • Gain knowledge on Mendel's genetics and its extensions • Know about variation in chromosome number and structure • understand about population and evolutionary genetics 	Unit 1: Heredity	Knowledge, understanding, application
				Unit 2: Sex-determination and Sex-linked Inheritance	Knowledge, understanding
				Unit 3: Linkage and crossing over	Knowledge, understanding, application
				Unit 4: Mutations and Chromosomal Aberrations	Knowledge, understanding, application
				Unit 5: Plant Breeding	Knowledge, understanding, application
				Unit 6: Methods of crop improvement	Knowledge, understanding, application
				Unit 7: Quantitative inheritance	Knowledge, understanding

				Unit 8: Inbreeding depression and heterosis	Knowledge, understanding
				Unit 9: Crop improvement and breeding	Knowledge, understanding, application
27	6 th	BOT-RE-6016 Analytical Techniques in Plant Sciences	<ul style="list-style-type: none"> Gain knowledge about the different techniques used in Botany Understand the working principles of different instruments used in biotechnology 	Unit 1: Imaging and related techniques	Knowledge, understanding, application
				Unit 2: Cell fractionation	Knowledge, understanding, application
				Unit 3: Radioisotopes	Knowledge, understanding, application
				Unit 4: Spectrophotometry	Knowledge, understanding, application
				Unit 5: Chromatography	Knowledge, understanding, application
				Unit 6: Characterization of proteins and nucleic acids.	Knowledge, understanding, application
				Unit 7: Biostatistics	Knowledge, understanding, application

11. a) BSc (Honours) Chemistry

SL. NO.	SEMESTER	PAPER CODE & TITLE	COURSE OUTCOMES	UNIT/ CHAPTER	BLOOM'S TAXONOMY LEVEL
1	1 st	CHE-HC-1016 Inorganic Chemistry-I	<ul style="list-style-type: none"> On successful completion, students would have clear understanding of the concepts related to atomic and molecular structure, chemical bonding, periodic properties and redox behavior of chemical species. Students will also have hands on experience of standard solution preparation in different concentration units and learn volumetric estimation through acid-base and redox reactions. 	Unit 1: Atomic Structure	Understand and Remember
				Unit 2: Periodicity of Elements	Understand and Remember
		LAB		Unit 3: Chemical Bonding	Understand and Remember
		Unit 4: Oxidation-Reduction		Understand and Remember	
		Unit 5: Titrimetric Analysis, Acid-Base Titrations and Oxidation-Reduction Titrimetry		Apply, Analyze and Evaluate	
2	1 st	CHE-HC-1026 Physical Chemistry I	<ul style="list-style-type: none"> In gaseous state unit the students will learn the kinetic theory of gases, ideal gas and real gases. In liquid state unit, the students are expected to learn the qualitative treatment of the structure of liquid along with the physical properties of liquid, viz, vapour pressure, surface tension and viscosity. 	Unit 1: Gaseous State	Understand and Remember
				Unit 2: Liquid State	Understand and Remember
		LAB		Unit 4: Molecular and Crystal Symmetry	Understand and Remember
			Unit 5: Solid State	Understand and Remember	

			<p>In the molecular and crystal symmetry unit they will be introduced to the elementary idea of symmetry which will be useful to understand solid state chemistry and group theory in some higher courses. In solid state unit the students will learn the basic solid state chemistry application of x-ray crystallography for the determination of some very simple crystal structures. The students will also learn another important topic “ionic equilibria” in this course.</p>	Unit 6: Ionic Equilibria	Understand and Remember
				Unit 7: Surface tension measurements, Viscosity measurement using Ostwald’s viscometer, Indexing of a given powder diffraction pattern of a cubic crystalline system and pH metry	Apply, Analyze and Evaluate
3	2 nd	CHE-HC-2016 Organic Chemistry I	<ul style="list-style-type: none"> Students will be able to identify different classes of organic compounds, describe their reactivity and explain/analyze their chemical and stereo chemical aspects. 	Unit 1: Basics of Organic Chemistry	Understand and Remember
				Unit 2: Stereo chemistry	Understand, Remember and Apply
		LAB		Unit 3: Chemistry of Aliphatic Hydrocarbons <ul style="list-style-type: none"> a) Carbon-Carbon sigma bonds b) Carbon-Carbon Pi bonds c) Cycloalkanes and Conformational Analysis 	Understand and Remember
				Unit 4: Aromatic Hydrocarbons	Understand and Remember

				Unit 5: Checking the calibration of the thermometer, Purification of organic compounds by crystallization, Determination of melting points and boiling points of unknown organic compounds, Effect of impurities on the melting point – mixed melting point of two unknown organic Compounds and chromatography	Apply, Analyze and Evaluate
4	2 nd	CHE-HC-2026 Physical Chemistry-II	<ul style="list-style-type: none"> In this course the students are expected to learn laws of thermodynamics, thermochemistry, thermodynamic functions, relations between thermodynamic properties, Gibbs Helmholtz equation, Maxwell relations etc. Moreover, the students are expected to learn partial molar quantities, chemical equilibrium, solutions and colligative properties. After completion of this course, the students will be able to understand the chemical systems from thermodynamic point of view. 	Unit 1: Chemical Thermodynamics	Understand and Remember
				Unit 2: System of variable compositions	Understand and Remember
		Unit 3: Chemical Equilibrium		Understand and Remember	
		Unit 4: Solutions and Colligative properties		Understand and Remember	
		Unit 5: Determination of heat capacity of a calorimeter for different volumes using change of enthalpy data of a known system, Determination of heat capacity of the		Apply, Analyze and Evaluate	
		LAB			

				calorimeter and enthalpy of neutralization of hydrochloric acid with sodium hydroxide, Calculation of the enthalpy of ionization of ethanoic acid, Determination of heat capacity of the calorimeter and integral enthalpy (endothermic and exothermic) solution of salts, Determination of basicity/proticity of a polyprotic acid by the thermochemical method, Determination of enthalpy of hydration of copper sulphate and Study of the solubility of benzoic acid in water and determination of ΔH .	
5	3 rd	CHE-HC-3016 Inorganic Chemistry-II	<ul style="list-style-type: none"> On successful completion of this course students would be able to apply theoretical principles of redox chemistry in the understanding of metallurgical processes. Students will be able to identify the variety of s and p block compounds and comprehend their preparation, structure, bonding, properties and uses. Experiments in this course will boost their quantitative estimation skills and introduce the students to 	Unit 1: General Principles of Metallurgy	Understand and Remember
				Unit 2: Acids and Bases	Understand, Remember and Apply
				Unit 3: Chemistry of s and p Block Elements	Understand and Remember
				Unit 4: Noble Gases	Understand and Remember

		LAB	preparative methods in inorganic chemistry.	Unit 5: Inorganic polymers	Understand and Remember
				Unit 6: Iodo/Iodimetric Titrations and Inorganic preparations	Apply, Analyze and Evaluate
6	3 rd	CHE-HC-3026 Organic Chemistry- II	<ul style="list-style-type: none"> Students will be able to describe and classify organic compounds in terms of their functional groups and reactivity. 	Unit 1: Chemistry of Halogenated Hydrocarbons	Understand and Remember
				Unit 2: Alcohols, Phenols, Ethers and Epoxides	Understand and Remember
				Unit 3: Carbonyl compounds	Understand and Remember
		LAB			
		Unit 4: Carboxylic Acids and their Derivatives		Understand and Remember	
		Unit 5: Sulphur containing compounds		Understand and Remember	
		Unit 6: Test of functional groups like alcohols, phenols, carbonyl and carboxylic acid group and organic preparation		Apply, Analyze and Evaluate	

7	3 rd	CHE-HC-3036 Physical Chemistry- III	<ul style="list-style-type: none"> The students are expected to learn phase rule and its application in some specific systems. They will also learn rate laws of chemical transformation, experimental methods of rate law determination, steady state approximation etc. in chemical kinetics unit. After attending this course the students will be able to understand different types of surface adsorption processes and basics of catalysis including enzyme catalysis, acid base catalysis and particle size effect on catalysis. 	Unit 1 : Phase Equilibria	Understand and Remember
				Unit 2: Chemical Kinetics	Understand and Remember
		LAB		Unit 3: Catalysis	Understand and Remember
				Unit 4: Surface Chemistry	Understand and Remember
				Unit 5: Determination of critical solution temperature and composition of the phenol- water system, Construction of the phase diagram using cooling curves or ignition tube method, Distribution of acetic/ benzoic acid between water and cyclohexane, Equilibrium and Kinetics study of different reactions	Apply, Analyze and Evaluate
8	3 rd	CHE-SE-3034 Basic Analytical Chemistry	<ul style="list-style-type: none"> Upon completion of this course, students shall be able to explain the basic principles of chemical analysis, design/implement microscale and semimicro experiments, record, interpret and analyze 	Unit 1: Introduction	Understand and Remember
				Unit 2: Analysis of soil	Understand and Remember
				Unit 3: Analysis of water	Understand and Remember

		LAB	data following scientific methodology.		
				Unit 4: Analysis of food products	Understand and Remember
				Unit 5: Chromatography	Understand and Remember
				Unit 6: Ion-exchange	Understand and Remember
				Unit 7: Analysis of cosmetics	Understand and Remember
				Unit 8: To study the use of phenolphthalein in trap cases, To analyze arson accelerants, To carry out analysis of gasoline, Estimation of macro nutrients, Spectrophotometric determination of Iron in Vitamin /Dietary Tablets and Spectrophotometric Identification and Determination of Caffeine and Benzoic Acid in Soft Drink	Apply, Analyze and Evaluate

9	4 th	CHE-HC-4016 Inorganic Chemistry-III	<ul style="list-style-type: none"> On successful completion, students will be able name coordination compounds according to IUPAC, explain bonding in this class of compounds, understand their various properties in terms of CFSE and predict reactivity. Students will be able to appreciate the general trends in the properties of transition elements in the periodic table and identify differences among the rows. Through the experiments students not only will be able to prepare, estimate or separate metal complexes/compounds but also will be able to design experiments independently which they should be able to apply if and when required. 	Unit 1: Coordination Chemistry	Understand and Remember
		LAB		Unit 2: Transition Elements	Understand and Remember
				Unit 3: Lanthanoids and Actinoids	Understand and Remember
				Unit 4: Bioinorganic Chemistry	Understand and Remember
				Unit 5: Gravimetric Analysis, Inorganic Preparations and Chromatography of metal ions	Apply, Analyze and Evaluate
10	4 th	CHE-HC-4026 Organic Chemistry- III	<ul style="list-style-type: none"> Students shall demonstrate the ability to identify and classify different types of N- based derivatives, alkaloids and heterocyclic compounds/explain their structure mechanism and 	Unit 1: Nitrogen Containing Functional Groups	Understand and Remember
		LAB		Unit 2: Polynuclear Hydrocarbons	Understand and Remember

			<p>reactivity/critically examine their synthesis and reactions mechanism.</p>	<p>Unit 3: Heterocyclic compounds</p>	<p>Understand and Remember</p>
				<p>Unit 4: Alkaloids</p>	<p>Understand and Remember</p>
				<p>Unit 5: Terpenes</p>	<p>Understand and Remember</p>
				<p>Unit 6: Detection N, S, halogens in organic compounds, Functional group test for nitro, amine and amide groups and Qualitative analysis of unknown organic compounds containing simple functional groups</p>	<p>Apply, Analyze and Evaluate</p>
11	4th	CHE-HC-4036: Physical Chemistry- IV	<ul style="list-style-type: none"> In this course the students will learn theories of conductance and electrochemistry. Students will also understand some very important topics such as solubility and solubility products, ionic products of water, conductometric titrations etc. The students are also expected to understand the various parts of electrochemical cells along with Faraday's Laws of electrolysis. The students will also gain basic 	<p>Unit 1: Conductance</p>	<p>Understand and Remember</p>
				<p>Unit 2: Electrochemistry</p>	<p>Understand and Remember</p>
		LAB		<p>Unit 3: Electrical & Magnetic Properties of Atoms and Molecules</p>	<p>Understand and Remember</p>
				<p>Unit 4: Determination of cell constant, equivalent conductance, degree of dissociation and dissociation constant of a weak acid and conductometric and</p>	<p>Apply, Analyze and Evaluate</p>

			theoretical idea of electrical & magnetic properties of atoms and molecules.	potentiometric titrations	
12	4 th	CHE-SE-4014 Analytical Clinical Biochemistry	<ul style="list-style-type: none"> Students will be able to identify various molecules relevant to a particular pathological condition and their estimation protocols 	Unit 1: Basic understanding of the structures, properties and functions of carbohydrates, lipids and proteins	Understand and Remember
		LAB		Unit 2: Biochemistry of disease: A diagnostic approach by blood/ urine analysis	Understand and Remember
				Unit 3: Identification and estimation Carbohydrates, Lipids, protein, cholesterol and nucleic acid. Determination of iodine number, saponification number of oil.	Apply, Analyze and Evaluate
13	5 th	CHE-HC-5016: Organic Chemistry- IV	<ul style="list-style-type: none"> Students will be able to explain/describe the important features of nucleic acids, amino acids and enzymes and develop their ability to examine their properties and applications. 	Unit 1: Nucleic Acids	Understand and Remember
		LAB		Unit 2: Amino Acids, Peptides and Proteins	Understand and Remember
				Unit 3: Enzyme	Understand and Remember

				Unit 4: Lipids	Understand and Remember
				Unit 5: Concept of Energy in Biosystems	Understand and Remember
				Unit 6: Pharmaceutical Compounds: Structure and Importance	Understand and Remember
				Unit 7: Estimation of glycine by Sorenson's formalin method, Study of the titration curve of glycine, Estimation of proteins by Lowry's method, Study of the action of salivary amylase on starch at optimum conditions, Effect of temperature on the action of salivary amylase, Saponification value of an oil or a fat, Determination of Iodine number of an oil/ fat and Isolation and characterization of DNA from onion/ cauliflower/peas.	Apply, Analyze and Evaluate
14	5 th	CHE-HC-5026 Physical Chemistry-V	<ul style="list-style-type: none"> After completion of this course the students are expected to understand the application of quantum 	Unit 1: Quantum Chemistry	Understand and Remember
				Unit 2: Molecular	Understand and Remember

		LAB	mechanics in some simple chemical systems such as hydrogen atom or hydrogen like ions. The students will also learn chemical bonding in some simple molecular systems. They will be able to understand the basics of various kinds of spectroscopic techniques and photochemistry.	Spectroscopy	
				Unit 3: Photochemistry	Understand and Remember
				Unit 4: UV/Visible spectroscopy and Colourimetry	Apply, Analyze and Evaluate
15	5 th	CHE-HE-5026 Analytical Methods in Chemistry	<ul style="list-style-type: none"> On successful completion students will have theoretical understanding about choice of various analytical techniques used for qualitative and quantitative characterization of samples. At the same time through the experiments students will gain hands on experience of the discussed techniques. This will enable students to take judicious decisions while analyzing different samples. 	Unit 1: Qualitative and quantitative aspects of analysis	Understand and Remember
		LAB		Unit 2: Optical methods of analysis	Understand and Remember
				Unit 3: Thermal methods of analysis	Understand and Remember
				Unit 4: Electroanalytical methods	Understand and Remember
				Unit 5: Separation techniques	Understand and Remember

				Unit 6: Chromatographic separations, solvent extractions, Determine the pH of the given aerated drinks fruit juices, shampoos and soaps, Determination of Na, Ca, Li in cola drinks and fruit juices using fame photometric techniques, Analysis of soil, ion-exchange and spectrophotometry experiments	Apply, Analyze and Evaluate
16	5 th	CHE-HE-5056 Polymer Chemistry	<ul style="list-style-type: none"> After completion of this course the students will learn the definition and classifications of polymers, kinetics of polymerization, molecular weight of polymers, glass transition temperature, and polymer solutions etc. They also learn the brief introduction of preparation, structure and properties of some industrially important and technologically promising polymers. 	Unit 1: Introduction and history of polymeric materials	Understand and Remember
				Unit 2: Functionality and its importance	Understand and Remember
		LAB		Unit 3: Kinetics of Polymerization	Understand and Remember
		Unit 4: Crystallization and crystallinity		Understand and Remember	
		Unit 5: Nature and structure of polymers		Understand and Remember	

				Unit 6: Determination of molecular weight of polymers	Understand and Remember
				Unit 7: Glass transition temperature (T _g) and determination of T _g	Understand and Remember
				Unit 8: Polymer Solution	Understand and Remember
				Unit 9: Properties of Polymers	Understand and Remember
				Unit 10: Polymer synthesis, Polymer characterization and Polymer analysis	Apply, Analyze and Evaluate
17	6 th	CHE-HC-6016 Inorganic Chemistry-IV	<ul style="list-style-type: none"> By studying this course the students will be expected to learn about how ligand substitution and redox reactions take place in coordination complexes. Students will also learn about organometallic compounds, comprehend their bonding, stability, reactivity and uses. They will be familiar with the variety of catalysts based on transition metals and their application in industry. On 	Unit 1: Mechanism of Inorganic Reactions	Understand and Remember
				Unit 2: Organometallic Compounds	Understand and Remember
		Unit 3: Transition Metals in Catalysis		Understand and Remember	
		Unit 4: Theoretical Principles in Qualitative Inorganic Analysis (H ₂ S Scheme)		Understand and Remember	
		LAB			

			<p>successful completion, students in general will be able to appreciate the use of concepts like solubility product, common ion effect, pH etc. in analysis of ions and how a clever design of reactions, it is possible to identify the components in a mixture. With the experiments related to coordination compound synthesis, calculation of 10Dq, controlling factors etc. will make the students appreciate the concepts of theory in experiments.</p>	<p>Unit 5: Qualitative semimicro analysis of mixtures containing 3 anions and 3 cations, Synthesis of ammine complexes of Ni(II) and their ligand exchange reactions involving bidentate ligands like acetylacetone, dimethylglyoxime, glycine, Preparation of acetyl acetanato complexes of $\text{Cu}^{2+}/\text{Fe}^{3+}$, Controlled synthesis of two copper oxalate hydrate complexes, Determination of ϵ_{max} value from UV-visible spectra of complexes and Measurement of 10 Dq by spectrophotometric method</p>	<p>Apply, Analyze and Evaluate</p>
18	6 th	CHE-HC-6026	<ul style="list-style-type: none"> Students will be able to explain/describe basic principles of different spectroscopic techniques and their importance in chemical/organic analysis. Students shall be able to classify/identify/critically examine carbohydrates, 	Unit 1: Spectroscopy	Understand and Remember
		Organic Chemistry- V		Unit 2: Carbohydrates	Understand and Remember
		LAB		Unit 3: Dyes	Understand and Remember

			polymers and dye materials.	Unit 4: Polymers	Understand and Remember
				Unit 5: Extraction of caffeine from tea leaves, Preparation of sodium polyacrylate and urea formaldehyde, Analysis of Carbohydrate, Qualitative analysis of unknown organic compounds containing monofunctional groups, Identification of simple organic compounds by IR spectroscopy and NMR spectroscopy and preparation of methyl orange	Apply, Analyze and Evaluate
19	6 th	CHE-HE-6024 Industrial Chemicals and environment	<ul style="list-style-type: none"> After successful completion of the course, students would have learnt about the manufacture, applications and safe ways of storage and handling gaseous and inorganic industrial chemicals. Students will get to know about industrial metallurgy and the energy generation industry. Students will also learn about environmental pollution by various gaseous, liquid wastes and nuclear wastes and their effects on living 	Unit 1: Industrial gases and inorganic chemicals	Understand and Remember
				Unit 2: Industrial metallurgy	Understand and Remember
		Unit 3: Environment and its segment		Understand and Remember	
		Unit 4: Energy and environment		Understand and Remember	
		Unit 5: Biocatalysis		Understand and Remember	
		LAB			

			<p>beings. Finally, the students will learn about industrial waste management, their safe disposal and the importance of environment friendly “green chemistry” in chemical industry</p>	<p>Unit 6: Determination of dissolved oxygen, Chemical Oxygen Demand (COD), Biological Oxygen Demand (BOD), total alkalinity, dissolved CO₂. Percentage of available chlorine in bleaching powder. Measurement of chloride, sulphate and salinity of water samples. Study of some of the common bio-indicators of pollution, SPM in air samples. Preparation of borax/ boric acid.</p>	Apply, Analyze and Evaluate
20	6 th	CHE-HE-6056 Dissertation	<ul style="list-style-type: none"> Student will complete a project work and then prepare a report on that and present before an external evaluator 		Analyze, Evaluate and Create

11. b) BSc (Regular, Generic) Chemistry

21	1 st	CHE-RC-1016 CHE-HG-1016 Chemistry-1	<ul style="list-style-type: none"> After completion of this course the students will learn the atomic structure through the basic concepts of quantum mechanics. They will understand the chemical bonding through 	Unit 1: Atomic Structure	Understand and Remember
				Unit 2: Chemical Bonding and Molecular Structure	Understand and Remember

		LAB	VB and MO approaches. In organic part, the students are expected to learn basic ideas used in organic chemistry, stereochemistry, functional groups, alkanes, alkenes, alkynes etc.	Unit 3: Fundamentals of Organic Chemistry	Understand and Remember
				Unit 4: Stereochemistry	Understand and Remember
				Unit 5: Aliphatic Hydrocarbons Alkanes, Alkenes and Alkynes	Understand and Remember
				Unit 6: Estimation of Na ₂ CO ₃ , NaHCO ₃ , oxalic acid, water of crystallization, Fe(II) and Cu(II) ions by volumetric analysis Detection of extra elements in organic compounds and Separation of mixtures by chromatography	Apply, Analyze and Evaluate
22	2 nd	CHE-RC-2016 CHE-HG-2016 Chemistry-2	<ul style="list-style-type: none"> After completion of this course the students will learn periodic properties in main group elements, transition metals (3d series). They will also learn the crystal field theory in coordination chemistry unit. In physical chemistry part, 	Unit 1: s- and p-Block Elements	Understand and Remember
		LAB		Unit 2: Transition Elements (3d series)	Understand and Remember
				Unit 3: Coordination Chemistry	Understand and Remember

			the students are expected to learn kinetic theory of gases, ideal gas and real gases, surface tension, viscosity, basic solid state chemistry and chemical kinetics.	Unit 4: Kinetic Theory of Gases	Understand and Remember
				Unit 5: Liquids	Understand and Remember
				Unit 6: Solids	Understand and Remember
				Unit 7: Chemical Kinetics	Understand and Remember
				Unit 8: Semi-micro inorganic qualitative analysis, Estimation of Ni and Al gravimetrically, Determination of composition of Fe ³⁺ -salicylic acid complex solution by Job's method, Estimation of Mg ²⁺ , Zn ²⁺ and total hardness by complexometric titration, Determination of N ⁺ and K ⁺ using Flame Photometry, Surface tension measurement, Viscosity measurement and Chemical Kinetics	Apply, Analyze and Evaluate
23	3 rd	CHE-RC-3016 CHE-HG-3016 Chemistry-3	<ul style="list-style-type: none"> After completion of this course the students will able to understand the chemical system from thermodynamic points of 	Unit 1: Chemical Energetics	Understand and Remember
				Unit 2: Chemical Equilibrium	

		LAB	view. They will also learn two very important topics in chemistry- chemical equilibrium and ionic equilibrium. In organic chemistry part, the students are expected to learn various classes of organic molecules-alkyl halides, aryl halides, alcohols, phenols, ethers, aldehydes and ketones.		Understand and Remember
				Unit 3: Ionic Equilibria	Understand and Remember
				Unit 4: Aromatic hydrocarbons	Understand and Remember
				Unit 5: Alkyl and Aryl Halides	Understand and Remember
				Unit 6: Alcohols, Phenols and Ethers	Understand and Remember
				Unit 7: Aldehydes and ketones (aliphatic and aromatic)	Understand and Remember
				Unit 8: Determination of heat capacity of calorimeter for different volumes, enthalpy of neutralization of hydrochloric acid with sodium hydroxide, enthalpy of ionization of acetic acid, integral enthalpy of solution of salts and enthalpy of hydration of copper sulphate, Study of the solubility of benzoic acid in water and	Apply, Analyze and Evaluate

				determination of ΔH , Measurements of pH of different solutions and preparation of buffer solutions. Purification of organic compounds by crystallization, Determination of melting and boiling points and preparation of various organic compounds	
24	3 rd	CHE-SE-3034 Basic Analytical Chemistry	<ul style="list-style-type: none"> Upon completion of this course, students shall be able to explain the basic principles of chemical analysis, design/implement microscale and semimicro experiments, record, interpret and analyze data following scientific methodology. 	Unit 1: Introduction	Understand and Remember
				Unit 2: Analysis of soil	Understand and Remember
				Unit 3: Analysis of water	Understand and Remember
		LAB		Unit 4: Analysis of food products	Understand and Remember
		Unit 5: Chromatography		Understand and Remember	

				Unit 6: Ion-exchange	Understand and Remember
				Unit 7: Analysis of cosmetics	Understand and Remember
				Unit 8: To study the use of phenolphthalein in trap cases, To analyze arson accelerants, To carry out analysis of gasoline, Estimation of macro nutrients, Spectrophotometric determination of Iron in Vitamin /Dietary Tablets and Spectrophotometric Identification and Determination of Caffeine and Benzoic Acid in Soft Drink	Apply, Analyze and Evaluate
25	4 th	CHE- RC-4016 CHE-HG-4016: Chemistry-4	<ul style="list-style-type: none"> After completion of this course the students learn solutions, phase rule and its application in specific cases, basics of conductance and 	Unit 1: Solutions	Understand and Remember
				Unit 2: Phase Equilibrium	Understand and Remember
				Unit 3: Conductance	Understand and Remember

		LAB		Unit 4: Electrochemistry	Understand and Remember
				Unit 5: Carboxylic acids and their derivatives	Understand and Remember
				Unit 6: Amines and Diazonium Salts	Understand and Remember
				Unit 7: Amino Acids, Peptides and Proteins	Understand and Remember
				Unit 8: Carbohydrates	Understand and Remember
				Unit 9: Study of equilibrium by distribution method, Construction of the phase diagram of a binary system, Determination of the critical solution temperature and composition of the phenol water system, Study of the variation of mutual solubility temperature with concentration for the phenol water system and determination of the critical solubility temperature, Determination of cell constant, equivalent conductance, degree of dissociation and	Apply, Analyze and Evaluate

				<p>dissociation constant of a weak acid and conductometric and potentiometric titrations of strong acid vs. strong base and weak acid vs. strong base Qualitative Organic Analysis of Organic Compounds, Separation of amino acids by paper chromatography, Determination of the concentration of glycine solution by formylation method, Titration curve of glycine, Action of salivary amylase on starch, Effect of temperature on the action of salivary amylase on starch, Determination of the saponification value of an oil/fat, Determination of the iodine value of an oil/fat, Differentiation between a reducing/nonreducing sugar, Extraction of DNA from onion/ cauliflower</p>	
26	4 th	CHE-SE-4034 Pharmaceutical Chemistry	<ul style="list-style-type: none"> Students will be able to appreciate the drug development process, identify various small molecules used for treatments different 	Unit 1: Drugs & Pharmaceuticals	Understand and Remember
				Unit 2: Fermentation	Understand and Remember

		LAB	ailments and other physiological processes.	Unit 3: Preparation of Aspirin and its analysis, Preparation of magnesium bisilicate	Apply, Analyze and Evaluate
27	5 th	CHE-RE-5026 Analytical Methods in Chemistry	<ul style="list-style-type: none"> On successful completion students will be have theoretical understanding about choice of various analytical techniques used for qualitative and quantitative characterization of samples. At the same time through the experiments students will gain hands on experience of the discussed techniques. This will enable students to take judicious decisions while analyzing different samples. 	Unit 1: Qualitative and quantitative aspects of analysis	Understand, Remember and Apply
				Unit 2: Optical methods of analysis	Understand and Remember
		Unit 3: Thermal methods of analysis		Understand and Remember	
		Unit 4: Electroanalytical methods		Understand and Remember	
		Unit 5: Separation techniques		Understand, Remember and Apply	
		LAB			

				Unit 6: Chromatographic separations, solvent extractions, Determine the pH of the given aerated drinks fruit juices, shampoos and soaps, Determination of Na, Ca, Li in cola drinks and fruit juices using fame photometric techniques, Analysis of soil, ion-exchange and spectrophotometry experiments	Apply, Analyze and Evaluate
28	5 th	CHE-SE-5044 Intellectual Property Rights	<ul style="list-style-type: none"> After completing this course, students will have in-depth understanding about the importance and types of IPR. This course will also provide the clarity on the legal and economic aspects of the IP system. 	Unit 1: Introduction to Intellectual Property	Understand and Remember
				Unit 2: Copyrights	Understand and Remember
				Unit 3: Trademarks	Understand and Remember
				Unit 4: Patents	Understand and Remember
				Unit 5: Geographical Indications	Understand and Remember
				Unit 6: Industrial Designs	Understand and Remember

				Unit 7: Layout design of integrated circuits	Understand and Remember
				Unit 8: Trade Secrets	Understand and Remember
				Unit 9: Different International agreements a) World Trade Organization (WTO) b) Paris Convention	Understand and Remember
29	6 th	CHE-RE-6016 Green Chemistry	<ul style="list-style-type: none"> Apart from introducing learners to the principles of green chemistry, this course will make them conversant with applications of green chemistry to organic synthesis. Students will be prepared for taking up entry level jobs in the chemical industry. They also will have the option of studying further in the area. 	Unit 1: Introduction to Green Chemistry	Understand and Remember
				Unit 2: Principles of Green Chemistry and Designing a Chemical synthesis	Understand and Remember
		Unit 3: Examples of Green Synthesis/ Reactions		Understand and Remember	
		Unit 4: Future Trends in Green Chemistry		Understand and Remember	
		Unit 5: Safer starting materials, Preparation of biodiesel from vegetable oil, Principle of atom economy, Benzoin condensation using Thiamine Hydrochloride as a catalyst instead of cyanide, Reaction between furan and maleic acid in water and at		Apply, Analyze and Evaluate	
		LAB			

				<p>room temperature rather than in benzene and reflux, Extraction of D-limonene from orange peel using liquid CO₂ prepared from dry ice, Mechanochemical solvent free synthesis of azomethines, Co-crystal controlled solid state synthesis (C2S3) of N-organophthalimide using phthalic anhydride and 3-aminobenzoic acid, Solvent free, microwave assisted one pot synthesis of phthalocyanine complex of copper(II) and Photoreduction of benzophenone to benzopinacol in the presence of sunlight</p>	
30	6 th	CHE-SE-6024 Pesticide Chemistry	<ul style="list-style-type: none"> Students will be able to explain or describe and critically examine different types of pesticides, their activity/toxicity and their applications and the need for the search of an alternative based on natural products. 	Unit 1: Definition of pesticides, general introduction to pesticides, benefits and adverse effects of pesticides.	Understand and Remember
				Unit 2: Classification, mode of action, toxicity and methods of pesticides residue analysis.	Understand and Remember
				Unit 3: Synthesis and technical manufacture and uses of representative pesticides	Understand and Remember

		LAB		Unit 4: To calculate acidity/alkalinity in given sample of pesticides formulations as per BIS specifications	Apply, Analyze and Evaluate
				Unit 5: Preparation of simple organophosphates, phosphonates and thiophosphates	Apply, Analyze and Evaluate

12. a) BSc (Honours) Mathematics

SL. NO.	SEMESTER	PAPER CODE & TITLE	COURSE OUTCOMES	UNIT/ CHAPTER	BLOOM'S TAXONOMY LEVEL
1	1 st	MAT-HC-1016 Calculus (Including Practical)	This course will enable the students to: <ul style="list-style-type: none"> • Learn first and second derivative tests for relative extremum and apply the knowledge in problems in business, economics and life sciences. • Sketch curves in a plane using its mathematical properties in different coordinate systems. • Compute area of surfaces of revolution and the volume of solids by integrating over cross-sectional areas. • Understand the calculus of vector functions and its use to develop the basic principles of planetary motion. 	Unit 1 : Higher order derivatives, it's application, geometrical interpretation.	Remember, understand, apply, evaluate.
				Unit 2 : Reduction formula for integration and application of integration in geometry.	Remember, understand, apply, evaluate.
				Unit 3 : Vector functions and it's applications.	Remember, understand, apply, evaluate.
2	1 st	MAT-HC-1016 Algebra	This course will enable the students to: <ul style="list-style-type: none"> • Employ De Moivre's theorem in a number of applications to solve numerical problems. • Learn about equivalent classes and cardinality of a set. 	Unit 1 : Polar representation of complex numbers, De Moivre's theorem and applications.	Remember, understand, apply, evaluate
				Unit 2 : Mathematical logic, sets, functions	Remember, understand, apply, evaluate

			<ul style="list-style-type: none"> • Use modular arithmetic and basic properties of congruences. • Recognize consistent and inconsistent systems of linear equations by the row echelon form of the augmented matrix. • Learn about the solution sets of linear systems using matrix method and Cramer's rule 	Unit 3 : Relations, Induction principles, GCD of integers	Remember, understand, apply, evaluate
				Unit4 : Linear equations, matrix and it's applications	Remember, understand, apply, evaluate
3	2 nd	MAT-HC-2016 Real Analysis	This course will enable the students to: <ul style="list-style-type: none"> • Understand many properties of the real line \mathbb{R}, including completeness and Archimedean properties. • Learn to define sequences in terms of functions from \mathbb{N} to a subset of \mathbb{R}. • Recognize bounded, convergent, divergent, Cauchy and monotonic sequences and to calculate their limit superior, limit inferior, and the limit of a bounded sequence. 	Unit 1: Algebraic and order properties of \mathbb{R} .	Remember, understand, apply, evaluate
				Unit 2: Real sequences and it's convergence	Remember, understand, apply
				Unit 3: Infinite series and it's convergence	Remember, understand, apply
4	2 nd	MAT-HC-2026 Differential Equations	The course will enable the students to: <ul style="list-style-type: none"> • Learn basics of differential equations and mathematical modeling. • Formulate differential equations for various mathematical models. 	Unit 1: Basics of Mathematical Model, solution of 1 st order differential equations.	Remember, understand, apply, analyse.
				Unit 2: Introduction and analysis of different models.	Understand, apply, evaluate, create

			<ul style="list-style-type: none"> • Solve first order non-linear differential equations and linear differential equations of higher order using various techniques. • Apply these techniques to solve and analyze various mathematical models. 	Unit3 :Solutions of 2 nd order differential equations.	Remember, understand, apply, analyse.
5	3 rd	MAT-HC-3016 Theory of Real functions	<p>This course will enable the students to:</p> <ul style="list-style-type: none"> • Have a rigorous understanding of the concept of limit of a function. • Learn about continuity and uniform continuity of functions defined on intervals. • Understand geometrical properties of continuous functions on closed and bounded intervals. • Learn extensively about the concept of differentiability using limits, leading to a better understanding for applications. 	Unit 1 : Limit point of sets, limits of functions.	Remember, understand
				Unit2 : Continuous functions and related theorems	Understand, Remember
				Unit3 : Differentiability of a function and related theorems	Remember, understand analysis
6	3 rd	MAT-HC-3026 Group Theory-1	<p>The course will enable the students to:</p> <ul style="list-style-type: none"> • Recognize the mathematical objects that are groups, and classify them as abelian, cyclic and permutation groups, etc. • Link the fundamental concepts of groups and symmetrical figures. 	Unit 1: Definition and examples of group, subgroups, cyclic groups.	Remember, Understand, Analyse.
				Unit 2: Permutations, Lagrange's theorem, normal subgroups and factor groups.	Understand, Remember

			<ul style="list-style-type: none"> Analyze the subgroups of cyclic groups and classify subgroups of cyclic groups. Explain the significance of the notion of cosets, normal subgroups and factor groups. Learn about Lagrange's theorem and Fermat's Little theorem. Know about group homomorphisms and group isomorphisms. 	Unit 3 : Group homomorphism and related theorems	Remember, understand, analyse.
7	3 rd	MAT-HC-3036 Analytical Geometry	This course will enable the students to: <ul style="list-style-type: none"> Learn conic sections and transform co-ordinate systems Learn polar equation of a conic, tangent, normal and properties Have a rigorous understanding of the concept of three dimensional coordinates system. 	Unit 1 : Transformation of co-ordinates, pair of straight lines, different types of conics with general form.	Remember, Understand, analyse, apply.
				Unit 2: Plane, sphere, cone, cylinder, central conicoid	Remember, understand, apply.
8	4 th	MAT-HC-4016 Multivariate Calculus	This course will enable the students to: <ul style="list-style-type: none"> Learn the conceptual variations when advancing in calculus from one variable to multivariable discussion. Understand the maximization and minimization of multivariable functions subject to the given constraints 	Unit 1 : Functions of several variables, limit, continuity, partial derivatives, chain rule, level curves, tangent, gradient, directional derivative, total differential.	Remember, understand, apply, analyse, create.
				Unit 2 : Extrema of functions of several variables	Understand, Remember, apply, evaluate.

			<ul style="list-style-type: none"> Learn about inter-relationship amongst the line integral, double and triple integral formulations. Familiarize with Green's, Stokes' and Gauss divergence theorems. 	Unit3 : Double and triple integration, volume, area, surface area by it.	Remember, understand analyse, apply, create
				Unit4 : Line , surface integral. Green, Stokes, Divergence theorem and applications.	Apply, analyse, evaluate.
9	4 th	MAT-HC-4026 Numerical Methods (Including Practical)	The course will enable the students to: <ul style="list-style-type: none"> Learn some numerical methods to find the zeroes of nonlinear functions of a single variable and solution of a system of linear equations, up to a certain given level of precision. Know about methods to solve system of linear equations, such as False position method, Fixed point iteration method, Newton's method, Secant method and LU decomposition. Interpolation techniques to compute the values for a tabulated function at points not in the table. Applications of numerical differentiation and integration to convert differential equations into difference equations for numerical solutions. 	Unit 1: Algorithms, convergence, Solution of system of equations by different methods, LU decomposition	Remember, understand, apply, evaluate.
				Unit 2: Lagrange and Newton interpolation, finite difference operators.	Remember, understand, apply, evaluate.
				Unit 3: Numerical differentiation and integration. Trapezoidal, Simpson's and Euler's rule.	Understand, apply, analyse, evaluate.
10	4 th	MAT-HC-4036	This course will enable the students to:	Unit 1: Definition, examples and properties of rings, sub ring, ideal, integral domains,	Remember, understand, analyse.

		Ring Theory	<ul style="list-style-type: none"> • appreciate the significance of unique factorization in rings and integral domains • learn about fundamental concepts of ring, integral domains and fields. • know about ring homomorphism and isomorphisms theorems of rings. • learn about polynomial rings over commutative rings and about UFD. 	fields. Isomorphisms and homomorphisms of rings and related theorems.	
				Unit 2: Polynomial rings over commutative rings, division algorithm, principal and prime ideals, UFD and Euclidean domains, divisibility in integral domains.	Remember, understand, analyse.
11	4 th	MAT-HC-4016 Multivariate Calculus	<p>This course will enable the students to:</p> <ul style="list-style-type: none"> • Learn the conceptual variations when advancing in calculus from one variable to multivariable discussion. • Understand the maximization and minimization of multivariable functions subject to the given constraints • Learn about inter-relationship amongst the line integral, double and triple integral formulations. • Familiarize with Green's, Stokes' and Gauss divergence theorems. 	Unit 1: Functions of several variables, limit, continuity, partial derivatives, chain rule, level curves, tangent, gradient, directional derivative, total differential.	Remember, understand, apply, analyse, create.
				Unit 2: Extrema of functions of several variables	Understand, Remember, apply, evaluate.
				Unit 3: Double and triple integration, volume, area, surface area by it.	Remember, understand analyse, apply, create
				Unit 4: Line, surface integral. Green, Stokes, Divergence theorem and applications.	Apply, analyse, evaluate.

12	5 th	MAT-HC-5016 Complex Analysis (Including Practical)	The course will enable the students to: <ul style="list-style-type: none"> • Learn the significance of differentiability of complex functions leading to the understanding of Cauchy–Riemann equations. • Learn some elementary functions and can evaluate the contour integrals. • Understand the role of Cauchy–Goursat theorem and the Cauchy integral formula and their applications in evaluating complex integrals. 	Unit 1: Function of a complex variable. Limit, continuity, differentiability of complex numbers. Cauchy Riemann equations.	Remember, understand, apply, analyse.
				Unit 2: Analytic functions, harmonic functions, exponential, logarithmic and trigonometric functions, derivative and definite integral of functions.	Remember, apply, evaluate.
				Unit 3: Contours, contour integrals and examples	Remember, analyse, apply, evaluate.
				Unit 4: Antiderivative, Cauchy-Goursat theorem, Cauchy integral formula, Liouville’s theorem and fundamental theorem of algebra.	Apply, analyse, evaluate, create.
13	5 th	MAT-HC-5026 Linear Algebra	The course will enable the students to: <ul style="list-style-type: none"> • Learn about the concept of linear independence of vectors over a field, dimension of a vector space. 	Unit 1: Vector spaces, subspaces, null and column space, linear transformations, kernel, range, base, dimension, rank of vector space, change of basis.	Remember, understand, analyse, apply.

			<ul style="list-style-type: none"> • Basic concepts of linear transformations, dimension theorem, matrix representation of LT and change of co-ordinate matrix. • Compute characteristic polynomial, eigen values, eigen vectors, eigen space. Apply basic diagonalization results. • Compute inner products and determine orthogonality on vector spaces. 	<p>Unit 2: Eigen vectors and eigen values of a matrix, the characteristics equation, diagonalization, eigen vectors of a LT, complex eigen values. Invariant subspaces and Caley Hamilton theorem.</p>	Remember, apply, evaluate.
				<p>Unit 3: Inner product, length, orthogonality, orthogonal sets and projections. Gram Schmidt process, inner product space. Diagonalization of symmetric matrices and spectral theorem.</p>	Remember, understand, analyse, evaluate.
14	5 th	MAT-HE-5016: Number Theory	<p>This course will enable the students to:</p> <ul style="list-style-type: none"> • Learn about some fascinating discoveries related to the properties of prime numbers, and some of the open problems in number theory, viz., Goldbach conjecture etc. • Know about number theoretic functions and modular arithmetic. • Solve linear, quadratic and system of linear congruence equations. 	<p>Unit 1: Linear Diophantine equation $ax + by = n$, prime counting function, Goldbach conjecture, linear congruence, residue, Chinese remainder theorem, Fermat's Little theorem, Wilson's theorem.</p>	Remember, understand, analyse.
				<p>Unit 2: Number theoretic functions, sum and number of divisors, totally multiplicative functions, definition and properties of Dirichlet product, Mobius inversion formula, the greatest integer</p>	Remember, understand, analyse.

				function, Euler's phi function, Euler's theorem, residue.	
15	5 th	MAT-HE-5066 Programming in C (Including Practical)	The course will enable the students to: <ul style="list-style-type: none"> • Understand and apply the programming concepts of C which is important to mathematical investigation and problem solving. • Learn about structured data types in C and learn about different applications • Represent the outputs of programs visually in terms of well formatted text and plots. • Practical will enable the students to create and evaluate different problems using C 	Unit 1: Variables, constants, different terms related to C and it's library functions, structure of a C program, input/output functions and statements.	Understand, apply, create.
				Unit 2: Control statements, if-else statements, switch statement-	Understand, apply, create.
				Unit 3: Arrays and subscripted variables, function, function declaration, actual and formal arguments, function prototype, recursive function.	Understand, apply, analyse, create.
16	6 th	MAT-HC-6016 Riemann Integration and Metric spaces	The course will enable the students to: <ul style="list-style-type: none"> • Learn about some of the classes and properties of Riemann integrable functions, and the applications of the Fundamental theorems of integration. • Know about improper integrals including, beta and gamma functions. • Learn various natural and abstract formulations of distance on the sets of usual or unusual entities. Become 	Unit 1: Riemann integration concepts and some related theorems. Concepts of improper integrals, Gamma functions.	Remember, understand, apply, analyse, evaluate.
				Unit 2: Metric spaces, definition, examples sequence and Cauchy sequence, open and closed ball, complete metric space, subspace, dense and separable space.	Remember, Understand, analyse.

			<p>aware one such formulations leading to metric spaces.</p> <ul style="list-style-type: none"> Analyse how a theory advances from a particular frame to a general frame. Appreciate the mathematical understanding of various geometrical concepts, viz. Balls or connected sets etc. in an abstract setting. 	Unit3. Continuous mappings, sequential criterion , uniform continuity, homeomorphism, contraction mapping, connectedness.	Remember, understand analyse.
17	6 th	MAT-HC-6026 Partial Differential Equations (Including practical)	<p>The course will enable the students to:</p> <ul style="list-style-type: none"> Formulate, classify and transform first order PDEs into canonical form. Learn about method of characteristics and separation of variables to solve first order PDE's. Classify and solve second order linear PDEs. Learn about Cauchy problem for second order PDE and homogeneous as well as nonhomogeneous wave equations. 	Unit 1: Introduction, classification, construction of first order PDE, Cauchy problem, Integral surface, Cauchy, Charpit and Jacobi's method of solution.	Remember, understand, analyse, evaluate.
				Unit 2: Canonical form of 1 st order PDE, Method of separation of variables	Understand, analyse, apply.
				Unit 3: Reduction to canonical forms, equations with constant co-efficients, general solution.	Understand, apply, evaluate.
18	6 th	MAT-HE-6046 Hydromechanics	<p>The course will enable the students to:</p> <ul style="list-style-type: none"> Know about Pressure equation, rotating fluids. Learn about Fluid pressure on plane surfaces, resultant pressure on curved surfaces, Gas law, mixture of gases 	Unit 1: Pressure equation, equilibrium conditions, homogeneous and heterogeneous fluids, rotating fluid, pressure on curved and plane surfaces, centre of pressure, gas, mixture of gases, adiabatic expansion.	Remember, understand, analyse. Apply.

			<ul style="list-style-type: none"> Learn about the Eulerian and Lagrangian method. Learn about equation of continuity, examples, acceleration of a fluid at a point 	Unit 2: Velocity , acceleration of fluid at a point, Lagrangean and Eulerian methods of study of fluid motion, equation of continuity and equation of motion of fluid.	Remember, understand, analyse, apply.
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12. b) BSc (Regular, Generic) Mathematics

19	1 st	MAT-HG-1016 MAT-RC-1016 Calculus	<p>Completion of the course will enable the students to:</p> <ul style="list-style-type: none"> Understand continuity and differentiability in terms of limit. Describe asymptotic behavior in terms of limit involving infinity. Understand importance of Mean value theorems. Use derivative to explore behavior of a function and graphing it. 	Unit 1: Graph of different functions	Understand, apply, analyse, create.
				Unit 2: Limits and continuity of functions, properties of continuous functions, intermediate value theorem.	Remember, apply, evaluate.
				Unit 3: Differentiability, successive differentiation, Leibnitz theorem, higher order derivatives.	Understand, apply, evaluate.
				Unit 4: Rolle's Theorem, Lagrange's mean value theorem, geometrical interpretation and application, Taylor;s theorem, Maclaurin's theorem,	Remember, apply, analyse, evaluate.

				Unit 5: Functions of two and more variables, level curves, partial differentiation.	Understand, apply, create
20	2 nd	MAT-HG-2016 MAT-RC-2016 Algebra	The course will enable the students to: <ul style="list-style-type: none"> • Learn to solve cubic and biquadratic equations. Also learn relation between the roots and coefficients and it's uses. • Employ De Moivre's theorem in a number of applications. • Recognize consistent and inconsistent system of equations by row echelon form of matrix. Learn to find rank and inverse. • Learn basic ideas of group, subgroup, permutation group, cyclic group and preliminary knowledge of rings. 	Unit 1: Theory of equations, De Moivre's Theorem, roots of complex numbers.	Remember, understand, apply, evaluate.
				Unit 2: Matrices, algebra, row echelon and reduced row echelon form, inverse, rank, solution of system of equations.	Understand, apply, evaluate.
				Unit 3: Groups and rings. Permutation and cyclic groups.	Remember, understand, analyse.
21	3 rd	MAT-HG-3016 MAT-RC-3016 Differential Equations	This course will enable the students to: <ul style="list-style-type: none"> • Learn basics of differential equations and it's applications • Learn to classify 1st order linear differential equations and different methods of solutions. • Learn to solve 2nd order linear homogeneous as well as 	Unit 1: First order equations and methods of solutions, orthogonal and oblique trajectories, Wronskian and it's properties.	Remember, understand, analyse, apply.
				Unit 2: Solutions of 2 nd order linear homogeneous and nonhomogeneous equations,	Remember, understand, analyse, apply.

			nonhomogeneous differential equations by different methods.	Cauchy-Euler equations, simultaneous equations.	
22	4 th	MAT-HG-4016 MAT-RC-4016 Real Analysis	<p>This course will enable the students to:</p> <ul style="list-style-type: none"> • understand many properties of real line \mathbb{R}, including Archimedean and completeness properties. • learn to define sequences in terms of functions from \mathbb{R} to a subset of \mathbb{R}. • Recognize bounded, convergent, divergent, Cauchy and monotonic sequences and to calculate their limit superior, limit inferior and limits of bounded sequences. • learn to apply different tests to test convergence of infinite series. 	Unit 1: Algebraic and order properties of real numbers, open and closed sets. Limits and continuity of a function and their properties, uniform continuity.	Remember, understand, analyse, apply.
				Unit 2: Sequences, convergent and Cauchy sequences, subsequences, limits of sequence. Infinite series and convergence.	Remember, understand, apply, evaluate.
23	5 th	MAT-RE-5016 Number Theory	<p>This course will enable the students to:</p> <ul style="list-style-type: none"> • Learn about some fascinating discoveries related to the properties of prime numbers, and some of the open problems in number theory, viz., Goldbach conjecture etc. • Know about number theoretic functions and modular arithmetic. • Solve linear, quadratic and system of linear congruence equations. 	Unit 1: Linear Diophantine equation, prime counting function, Goldbach conjecture, linear congruence, residue, Chinese remainder theorem, Fermat's Little theorem, Wilson's theorem.	Remember, understand, analyse, apply.
				Unit 2: Number theoretic functions, sum and number of divisors, totally multiplicative	Remember, understand, apply, evaluate.

				functions, definition and properties of Dirichlet product, Mobius inversion formula, the greatest integer function, Euler's phi function, Euler's theorem, residue.	
26	6 th	MAT-RE-6016 Numerical Analysis	<p>This course will enable the students to:</p> <ul style="list-style-type: none"> • Learn some numerical methods to find the zeroes of nonlinear functions of a single variable and solution of a system of linear equations, up to a certain given level of precision. • Know about iterative and non-iterative methods to solve system of linear equations. • Know interpolation techniques to compute the values for a tabulated function at points not in the table. • Integrate a definite integral that cannot be done analytically. • Find numerical differentiation of functional values. • Solve differential equations that cannot be solved by analytical methods. 	<p>Unit 1: Gaussian elimination method (with row pivoting), Gauss-Jordan method; Iterative methods: Jacobi method, Gauss-Seidel method; Interpolation: Lagrange form, Newton form, Finite difference operators, Gregory-Newton forward and backward difference interpolations, Piecewise polynomial interpolation (Linear and Quadratic).</p>	Remember, understand, analyse, apply.
				<p>Unit 2: Numerical differentiation: First and second order derivatives; Numerical integration: Trapezoid rule, Simpson's rule; Extrapolation methods: Richardson extrapolation, Romberg</p>	Remember, understand, apply, evaluate.

				integration; Ordinary differential equation: Euler's method, Modified Euler's methods (Heun and Mid-point).	
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13. a) BSc (Honours) Physics

SL. NO.	SEMESTER	PAPER CODE & TITLE	COURSE OUTCOMES	UNIT/ CHAPTER	BLOOM'S TAXONOMY LEVEL
1	1 st	PHY-HC-1016 Mathematical Physics 1	<ul style="list-style-type: none"> Successful students should be able to understand vector and its applications in various fields, differential equations and its applications, different coordinate systems, concept of probability and error. 	Unit 1: Vector Calculus	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: First and Second order Differential Equations	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Orthogonal Curvilinear Coordinates	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Dirac Delta function and its Properties	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Introduction to Probability	Remember, Understand, Apply, Analyse, Evaluate
		Unit 6: Theory of Errors		Remember, Understand, Apply, Analyse, Evaluate	
		LAB			
2	1 st	PHY-HC-1026 Mechanics	<ul style="list-style-type: none"> On successful completion of the course students should be able to understand Inertial and non inertial reference frames, Newtonian motion, Galilean 	Unit 1: Fundamentals of Dynamics	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Work and Energy	Remember, Understand,

			transformations, projectile motion, work and energy, Elastic and inelastic collisions, motion under central force, simple harmonic oscillations, special theory of relativity.		Apply, Analyse, Evaluate
				Unit 3: Collisions	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Rotational Dynamics	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Elasticity	Remember, Understand, Apply, Analyse, Evaluate
				Unit 6: Fluid Motion	Remember, Understand, Apply, Analyse, Evaluate
				Unit 7: Gravitation and Central Force Motion	Remember, Understand, Apply, Analyse, Evaluate
				Unit 8: Oscillations	Remember, Understand, Apply, Analyse, Evaluate
				Unit 9: Non-Inertial Systems	Remember, Understand, Apply, Analyse, Evaluate
				Unit 10: Special Theory of Relativity	Remember, Understand, Apply, Analyse, Evaluate
		LAB			
3	2 nd	PHY-HC-2016	<ul style="list-style-type: none"> After successful completion of this course, students will be able 	Unit 1: Electric Field and Electric	Remember, Understand, Apply, Analyse, Evaluate

		Electricity & Magnetism	to Understand electric and magnetic fields in matter, Dielectric properties of matter magnetic properties of matter, electromagnetic induction, applications of Kirchhoff's law in different circuits, applications of network theorem in circuits.	Unit 2: Dielectric Properties of Matter	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Magnetic Field	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Magnetic Properties of Matter	Remember, Understand, Apply, Analyse, Evaluate
		LAB		Unit 5: Electromagnetic Induction	Remember, Understand, Apply, Analyse, Evaluate
				Unit 6: Electrical Circuits	Remember, Understand, Apply, Analyse, Evaluate
				Unit 7: Network Theorems	Remember, Understand, Apply, Analyse, Evaluate
				Unit 8: Ballistic Galvanometer	Remember, Understand, Apply, Analyse, Evaluate
4	2 nd	PHY-HC-2026 Waves & optics	<ul style="list-style-type: none"> After successful completion of this course, students will be able to Understand superposition of harmonic oscillations, different types of wave motions, superposition of harmonic waves, interference and 	Unit 1: Superposition of Collinear Harmonic Oscillations	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Superposition of Two Perpendicular Harmonic Oscillations	Remember, Understand, Apply, Analyse, Evaluate

			interferometer, diffraction, holography.	Unit 3: Wave Motion	Remember, Understand, Apply, Analyse, Evaluate
		LAB		Unit 4: Velocity of Waves	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Superposition of Two Harmonic Waves	Remember, Understand, Apply, Analyse, Evaluate
				Unit 6: Wave Optics	Remember, Understand, Apply, Analyse, Evaluate
				Unit 7: Interference	Remember, Understand, Apply, Analyse, Evaluate
				Unit 8: Interferometer	Remember, Understand, Apply, Analyse, Evaluate
				Unit 9: Diffraction	Remember, Understand, Apply, Analyse, Evaluate
				Unit 10: Fraunhofer Diffraction	Remember, Understand, Apply, Analyse, Evaluate
				Unit 11: Holography	Remember, Understand, Apply, Analyse, Evaluate

5	3 rd	PHY-HC-3016 Mathematical Physics II	<ul style="list-style-type: none"> After successful completion of the course, students will be able to solve differential equation using power series solution method, solve differential equation using separation of variables method, special integrals, different properties of matrix, Fourier series. 	Unit 1: Frobenius Method and Special Functions	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 2: Partial Differential Equations	Remember, Understand, Apply, Analyse, Evaluate, Create
		LAB		Unit 3: Some Special Integrals	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 4: Matrix	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 5: Fourier Series	Remember, Understand, Apply, Analyse, Evaluate, Create
6	3 rd	PHY-HC-3026 Thermal Physics	<ul style="list-style-type: none"> Upon successful completion, students will have the knowledge and skills to identify and describe the statistical nature of concepts and laws in thermodynamics, in particular: 	Unit 1: Zeroth and First Law of Thermodynamics	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Second Law of Thermodynamics	Remember, Understand, Apply, Analyse, Evaluate

			entropy, temperature, Thermodynamics potentials, Free energies, Maxwell's relations in thermodynamics, behaviour of real gases.	Unit 3: Entropy	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Thermodynamic Potentials	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Maxwell's Thermodynamic Relations	Remember, Understand, Apply, Analyse, Evaluate
				Unit 6: Distribution of Velocities	Remember, Understand, Apply, Analyse, Evaluate
				Unit 7: Molecular Collisions	Remember, Understand, Apply, Analyse, Evaluate
		LAB	Unit 8: Real Gases	Remember, Understand, Apply, Analyse, Evaluate	
7	3 rd	PHY-HC-3036 Digital Systems & Applications	<ul style="list-style-type: none"> After successful completion of the course student will be able to understand the working principle of CRO, develop a digital logic and apply it to solve real life problems, Analyze, design and implement combinational logic circuits, Classify different 	Unit 1: Introduction to CRO	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 2: Integrated Circuits (qualitative treatment only)	Remember, Understand, Apply, Analyse, Evaluate, Create

			semiconductor memories, Analyze, design and implement sequential logic circuits, Analyze digital system design using PLD, Simulate and implement combinational and sequential circuits.	Unit 3: Digital Circuits	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 4: Boolean Algebra	Remember, Understand, Apply, Analyse, Evaluate, Create
		LAB		Unit 5: Data Processing Circuits	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 6: Arithmetic Circuits	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 7: Sequential Circuits	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 8: Timers: IC 555	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 9: Shift Registers	Remember, Understand, Apply, Analyse, Evaluate, Create

				Unit 10: Counters (4 bits)	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 11: Computer Organization	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 12: Intel 8085 Microprocessor Architecture	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 13: Introduction to Assembly Language	Remember, Understand, Apply, Analyse, Evaluate, Create
8	4 th	PHY-SE-3024 Computational Physics Skills	<ul style="list-style-type: none"> The aim of this course is not just to teach computer programming and numerical analysis but to emphasize its role in solving problems in Physics. Highlights the use of computational methods to solve physical problems Use of computer language as a tool in solving physics problems (applications) 	Unit 1: Introduction	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 2: Basics of Scientific Programming	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 3: Scientific Programming	Remember, Understand, Apply, Analyse, Evaluate, Create

			<ul style="list-style-type: none"> Course will consist of hands on training on the Problem solving on Computers 	Unit 4: Control Statements, Functions, and Subroutines	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 5: Visualization	Remember, Understand, Apply, Analyse, Evaluate, Create
				Hands on exercises:	Remember, Understand, Apply, Analyse, Evaluate, Create
9	4 th	PHY-HC-4016 Mathematical Physics III	<ul style="list-style-type: none"> On successful completion of the course students will able to solve complex integrals using residue theorem, apply Fourier and Laplace transforms in solving differential equations, understand properties of Tensor like Transformation of coordinates, contravariant and co-variant tensors, indices rules for combining tensors. 	Unit 1: Complex Analysis	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 2: Complex Integration	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 3: Fourier Transforms	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 4: Laplace Transforms	Remember, Understand, Apply, Analyse, Evaluate, Create
		LAB			

				Unit 5: Tensor Algebra	Remember, Understand, Apply, Analyse, Evaluate, Create	
10	4 th	PHY-HC-4026 Elements of Modern Physics	<ul style="list-style-type: none"> On completion of the course students will be able to understand modern development in Physics, Starting from Planck's law, it development of the idea of probability interpretation and the formulation of Schrodinger equation. Students will also get preliminary idea of structure of nucleus, radioactivity Fission and Fusion and Laser 	Unit 1: Quantum Theory and Blackbody Radiation	Remember, Understand, Apply, Analyse, Evaluate	
				Unit 2: Uncertainty and Wave-Particle Duality	Remember, Understand, Apply, Analyse, Evaluate	
				Unit 3: Schrödinger Equation	Remember, Understand, Apply, Analyse, Evaluate	
				Unit 4: One-dimensional Box and Step Barrier	Remember, Understand, Apply, Analyse, Evaluate	
		LAB			Unit 5: Atomic Nucleus	Remember, Understand, Apply, Analyse, Evaluate
					Unit 6: Radioactivity	Remember, Understand, Apply, Analyse, Evaluate
					Unit 7: Detection of nuclear radiation	Remember, Understand, Apply, Analyse, Evaluate

				Unit 8: Fission and Fusion	Remember, Understand, Apply, Analyse, Evaluate
				Unit 9: Lasers	Remember, Understand, Apply, Analyse, Evaluate
11	4 th	PHY-HC-4036 Analog Systems & Applications	<ul style="list-style-type: none"> On successful completion of the course students will be able to understand about the physics of semiconductor p-n junction and devices such as rectifier diodes, zener diode, photodiode etc. and bipolar junction transistors, transistor biasing and stabilization circuits, the concept of feedback in amplifiers and the oscillator circuits, students will also have an understanding of operational amplifiers and their applications. 	Unit 1: Semiconductor Diodes	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Two-terminal Devices and their Applications	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Bipolar Junction Transistors	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Amplifiers	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Coupled Amplifier	Remember, Understand, Apply, Analyse, Evaluate
				Unit 6: Feedback in Amplifiers	Remember, Understand, Apply, Analyse, Evaluate
		LAB			

				Unit 7: Sinusoidal Oscillators	Remember, Understand, Apply, Analyse, Evaluate
				Unit 8: Operational Amplifiers (Black Box approach)	Remember, Understand, Apply, Analyse, Evaluate
				Unit 9: Applications of Op-Amps	Remember, Understand, Apply, Analyse, Evaluate
				Unit 10: Conversion	Remember, Understand, Apply, Analyse, Evaluate
12	4 th	PHY-SE-4024 Research & Technical Writing	<ul style="list-style-type: none"> On successful completion of the course students will be able to identify and write different parts of technical reports, write article, thesis, and presentation in latex, create chart in Microsoft excel, use different format of chart based on need, plot data from different sources using Origin plot. 	Unit 1: Introduction	Remember, Understand, Apply, Analyse, Evaluate, Create
		LAB		Unit 2: Technical Writing in LaTeX	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 3: Scientific graphing and data analysis	Remember, Understand, Apply, Analyse, Evaluate, Create
13	5 th	PHY-HC-5016	<ul style="list-style-type: none"> On successful completion of the course students will be able to 	Unit 1: Time Dependent Schrödinger Equation	Remember, Understand, Apply, Analyse, Evaluate

		Quantum Mechanics & Applications	<p>understand the principles in quantum mechanics, such as the Schrödinger equation, the wave function, the uncertainty principle, stationary and non-stationary states, time evolution of solutions, as well as the relation between quantum mechanics and linear algebra. Students will be able to solve the Schrödinger equation for hydrogen atom. Students will have the concepts of angular momentum and spin, as well as the rules for quantization and addition of these, spin-orbit coupling and Zeeman Effect.</p>	Unit 2: Time Independent Schrödinger Equation	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Bound States	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Hydrogen-like Atoms	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Atoms in Electric & Magnetic Fields	Remember, Understand, Apply, Analyse, Evaluate
				Unit 6: Many Electron Atom	Remember, Understand, Apply, Analyse, Evaluate
	LAB				
14	5 th	PHY-HC-5026	<ul style="list-style-type: none"> On successful completion of the course students should be able to explain the main features of crystal lattices and phonons, understand the elementary lattice dynamics and its influence on the properties of materials, describe the main features of the physics of electrons in solids; explain the dielectric ferroelectric and magnetic properties of solids and understand the basic concept in superconductivity 	Unit 1: Crystal Structure	Remember, Understand, Apply, Analyse, Evaluate
		Solid State Physics		Unit 2: Elementary Lattice Dynamics	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Magnetic Properties of Matter	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Dielectric Properties	Remember, Understand, Apply, Analyse, Evaluate
	LAB				

				Unit 5: Ferroelectric Properties	Remember, Understand, Apply, Analyse, Evaluate
				Unit 6: Free Electron Theory of Metals	Remember, Understand, Apply, Analyse, Evaluate
				Unit 7: Superconductivity	Remember, Understand, Apply, Analyse, Evaluate
15	5 th	PHY-HE-5046 Physics of Devices and Instruments	<ul style="list-style-type: none"> Upon completion of this course, students will be able to gain knowledge on advanced electronics devices such as UJT, JFET, MOSFET, CMOS etc., detailed process of IC fabrication, Digital Data serial and parallel Communication Standards along with the understanding of communication systems. 	Unit 1: Devices	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 2: Power supply and Filters	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 3: Active and Passive Filters	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 4: Multivibrators	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 5: Phase Locked Loop(PLL)	Remember, Understand, Apply, Analyse, Evaluate, Create
		LAB			

				Unit 6: Processing of Devices	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 7: Digital Data Communication Standards	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 8: Introduction to communication systems	Remember, Understand, Apply, Analyse, Evaluate, Create
16	5 th	PHY-HE-5056 Nuclear and Particle Physics	<ul style="list-style-type: none"> Upon completion of this course, students will have the understanding of the sub atomic particles and their properties. They will gain knowledge about the different nuclear techniques and their applications in different branches of Physics and societal application. The course will develop problem based skills and the acquire knowledge can be applied in the areas of nuclear, medical, archeology, geology and other interdisciplinary fields of Physics and Chemistry. 	Unit 1: General Properties of Nuclei	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Nuclear Models	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Radioactivity decay	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Nuclear Reactions	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Interaction of Nuclear Radiation with matter	Remember, Understand, Apply, Analyse, Evaluate

				Unit 6: Detector for Nuclear Radiations	Remember, Understand, Apply, Analyse, Evaluate
				Unit 7: Particle Accelerators	Remember, Understand, Apply, Analyse, Evaluate
				Unit 8: Particle physics	Remember, Understand, Apply, Analyse, Evaluate
17	6 th	PHY-HC-6016 Electromagnetic Theory	<ul style="list-style-type: none"> On successful completion of the course students will acquire the concepts of Maxwell's equations, propagation of electromagnetic (EM) waves in different homogeneous-isotropic as well as anisotropic unbounded and bounded media, production and detection of different types of polarized EM waves, general information as waveguides and fibre optics. 	Unit 1: Maxwell Equations	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: EM Wave Propagation in Unbounded Media	Remember, Understand, Apply, Analyse, Evaluate
		Unit 3: EM Wave in Bounded Media		Remember, Understand, Apply, Analyse, Evaluate	
		Unit 4: Polarization of Electromagnetic Waves		Remember, Understand, Apply, Analyse, Evaluate	
		Unit 5: Rotatory Polarization		Remember, Understand, Apply, Analyse, Evaluate	
		Unit 6: Optical Fibres		Remember, Understand, Apply, Analyse, Evaluate	
		LAB			

18	6 th	PHY-HC-6026 Statistical Mechanics	<ul style="list-style-type: none"> On successful completion of the course students will be learn the techniques of Statistical Mechanics to apply in various fields including Astrophysics, Semiconductors, Plasma Physics, Bio-Physics, Chemistry and in many other directions. 	Unit 1: Classical Statistics	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Classical Theory of Radiation.	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Quantum Theory of Radiation	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Bose-Einstein Statistics	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Fermi-Dirac Statistics	Remember, Understand, Apply, Analyse, Evaluate
		LAB			
19	6 th	PHY-HE-6046 Astronomy and Astrophysics	<ul style="list-style-type: none"> Upon completion of this course, students will be able to understanding the origin and evolution of the Universe. The course will give a comprehensive introduction on the measurement of basic astronomical parameters such as astronomical scales, luminosity and astronomical quantities. It will give an overview on key developments in observational astrophysics. Students will have the idea of the 	Unit 1: Stellar properties	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: The Sun and the solar system	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Positional Astronomy	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Astronomical Techniques	Remember, Understand, Apply, Analyse, Evaluate

			<p>instruments implemented for astronomical observation, the formation of planetary system and its evolution with time, the physical properties of Sun and the components of the solar system; and stellar and interstellar components of our Milky Way galaxy.</p> <ul style="list-style-type: none"> Students will have the understanding of the origin and evolution of galaxies, presence of dark matter and large scale structures of the Universe. 	<p>Unit 5: Galaxies</p>	<p>Remember, Understand, Apply, Analyse, Evaluate</p>
				<p>Unit 6: Large Scale Structure and Cosmology</p>	<p>Remember, Understand, Apply, Analyse, Evaluate</p>
20	6 th	<p>PHY-HE-6056 Physics-DSE: Classical Dynamics</p>	<ul style="list-style-type: none"> Upon completion of this course, students will have the overview of Newton's Laws of Motion, Special Theory of Relativity by 4-vector approach and fluids. Students will also have the understanding of the Lagrangian and Hamiltonian of a system. By the end of this course, students will be able to solve the seen or unseen problems/numericals in classical mechanics 	<p>Unit 1: Classical Mechanics of Point Particles</p>	<p>Remember, Understand, Apply, Analyse, Evaluate</p>
				<p>Unit 2: Small Amplitude Oscillations</p>	<p>Remember, Understand, Apply, Analyse, Evaluate</p>
				<p>Unit 3: Special Theory of Relativity</p>	<p>Remember, Understand, Apply, Analyse, Evaluate</p>
				<p>Unit 4: Fluid Dynamics</p>	<p>Remember, Understand, Apply, Analyse, Evaluate</p>

13. b) BSc (Regular, Generic) Physics

21	1 st	PHY-HG-1016	<ul style="list-style-type: none"> 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. 	Unit 1: Vectors	Remember, Understand, Apply, Analyse, Evaluate
		PHY-RC-1016		Unit 2: Laws of Motion	Remember, Understand, Apply, Analyse, Evaluate
		Mechanics		Unit 3: Momentum and Energy	Remember, Understand, Apply, Analyse, Evaluate
		LAB		Unit 4: Rotational Motion	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Gravitation	Remember, Understand, Apply, Analyse, Evaluate
				Unit 6: Oscillations	Remember, Understand, Apply, Analyse, Evaluate
				Unit 7: Elasticity	Remember, Understand, Apply, Analyse, Evaluate
				Unit 8: Special Theory of Relativity	Remember, Understand, Apply, Analyse, Evaluate

22	2 nd	PHY-HG-2016 PHY-RC-2016 Electricity & Magnetism	<ul style="list-style-type: none"> 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. 	Unit 1: Vector Analysis	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Electrostatics	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Magnetism	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Electromagnetic Induction	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Maxwell's Equations and EM Wave	Remember, Understand, Apply, Analyse, Evaluate
	LAB				
23	4 th	PHY-SE-3024 Computational Physics Skills	<ul style="list-style-type: none"> The aim of this course is not just to teach computer programming and numerical analysis but to emphasize its role in solving problems in Physics. Highlights the use of computational methods to solve physical problems Use of computer language as a tool in solving physics problems (applications) 	Unit 1: Introduction	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 2: Basics of Scientific Programming	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 3: Scientific Programming	Remember, Understand, Apply, Analyse, Evaluate, Create

			<ul style="list-style-type: none"> Course will consist of hands on training on the Problem solving on Computers 	Unit 4: Control Statements, Functions, and Subroutines	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 5: Visualization	Remember, Understand, Apply, Analyse, Evaluate, Create
				Hands on exercises:	Remember, Understand, Apply, Analyse, Evaluate, Create
24	4 th	PHY-HG-4016 PHY-RC-4016 Waves & Optics	<ul style="list-style-type: none"> 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, In the laboratory course, student will gain hands-on experience of using various optical 	Unit 1: Superposition of Two Collinear Harmonic Oscillations	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 2: Superposition of Two Perpendicular Harmonic Oscillations	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 3: Waves Motion	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 4: Fluids	Remember, Understand, Apply, Analyse, Evaluate, Create

			instruments.	Unit 5: Sound	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 6: Wave Optics	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 7: Interference	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 8: Michelson Interferometer	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 9: Diffraction	Remember, Understand, Apply, Analyse, Evaluate, Create
				Unit 10: Polarization	Remember, Understand, Apply, Analyse, Evaluate, Create
		LAB			
25	4 th	PHY-SE-4024 Research & Technical Writing	<ul style="list-style-type: none"> On successful completion of the course students will be able to identify and write different parts 	Unit 1: Introduction	Remember, Understand, Apply, Analyse, Evaluate, Create

			of technical reports, write article, thesis, and presentation in latex, create chart in Microsoft excel, use different format of chart based on need, plot data from different sources using Origin plot.	Unit 2: Technical Writing in LaTeX	Remember, Understand, Apply, Analyse, Evaluate, Create
		LAB		Unit 3: Scientific graphing and data analysis	Remember, Understand, Apply, Analyse, Evaluate, Create
26	5 th	PHY-HE-5056 Nuclear and Particle Physics	<ul style="list-style-type: none"> Upon completion of this course, students will have the understanding of the sub atomic particles and their properties. They will gain knowledge about the different nuclear techniques and their applications in different branches of Physics and societal application. The course will develop problem based skills and the acquire knowledge can be applied in the areas of nuclear, medical, archaeology, geology and other interdisciplinary fields of Physics and Chemistry. 	Unit 1: General Properties of Nuclei	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Nuclear Models	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Radioactivity decay	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Nuclear Reactions	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Interaction of Nuclear Radiation with matter	Remember, Understand, Apply, Analyse, Evaluate
				Unit 6: Detector for Nuclear Radiations	Remember, Understand, Apply, Analyse, Evaluate

				Unit 7: Particle Accelerators	Remember, Understand, Apply, Analyse, Evaluate
				Unit 8: Particle physics	Remember, Understand, Apply, Analyse, Evaluate

14. a) BSc (Honours) Statistics

SL. NO.	SEMESTER	PAPER CODE & TITLE	COURSE OUTCOMES	UNIT/ CHAPTER	BLOOM'S TAXONOMY LEVEL
1	1 st	STA-HC-1016 Descriptive Statistics	<p>The course learning outcomes for this paper is to ensure students achieve a comprehensive understanding of statistical methods, data analysis techniques, and their practical applications by applying. On successful completion of this paper students will be able to:</p> <ul style="list-style-type: none"> • Define and explain scope of statistics, statistical population and sample, Identify different types of data and scales of measurements • Students will be familiar with different methods of data collection. • Present data effectively using tabular and graphical methods assess the consistency and independence of data, especially with regards to attributes. • Calculate and interpret measures of central tendency and dispersion. Understand concept of correlation and regression. • Construct and interpret index 	Unit 1: Statistical Methods	Remember, Understand, Apply, Analyze & Evaluate
				Unit 2: Measures of Central Tendency	Remember, Understand, Apply, Analyze & Evaluate
				Unit 3: Bivariate data	Remember, Understand, Apply, Analyze & Evaluate
				Unit 4: Index Numbers	Remember, Understand, Apply, Analyze & Evaluate

			numbers.		
2	1 st	STA-HC-1026 Calculus	<p>Upon successful completion of this paper students will be able to understand:</p> <ul style="list-style-type: none"> Limits on function, continuous function, Partial and total differentiation, ∞, L Hospital's rule Leibnitz's rule for successive differentiation, Euler's theorem Maxima and minima of functions of one and two variables. Integral Calculus, Definite Integral, Double Integral, Beta and Gamma functions Differential equation of first order and higher order. Partial differential equations, their formation and solution 	Unit 1: Differential Calculus	Remember, Understand, Apply, Analyze & Evaluate
				Unit 2: Integral Calculus	Remember, Understand, Apply, Analyze & Evaluate
				Unit 3: Differential Equations	Remember, Understand, Apply, Analyze & Evaluate
				Unit 4: Partial Differential Equations	Remember, Understand, Apply, Analyze & Evaluate
3	2 nd	STA-HC-2016 Probability and Probability Distributions	<p>Students will acquire knowledge:-</p> <ul style="list-style-type: none"> To distinguish between random and non random experiments. 	Unit 1: Probability	Remember, Understand, Apply, Analyze & Evaluate
				Unit 2: Random variables	Remember, Understand, Apply, Analyze &

			<ul style="list-style-type: none"> On probabilities of events, calculation of probability of event by mathematical approach, calculation of inverse probability by Bayes theorem. On discrete and continuous random variable and their probability distribution including expectation and moments. On discrete distribution such as Binomial, Poisson, Geometric, Negative Binomial, Hyper geometric, and on continuous distribution such as normal, exponential, uniform, etc 		Evaluate
				Unit 3: Mathematical Expectation and Generating Functions	Remember, Understand, Apply, Analyze & Evaluate
				Unit 4: Mathematical Expectation and Generating Functions	Remember, Understand, Apply, Analyze & Evaluate
4	2 nd	STA-HC-2026 Algebra	<ul style="list-style-type: none"> The course will help students to identify the number of rows and columns within a matrix, Modify a matrix through individual operations of adding, multiplying and switching rows. Students will be familiar with different forms of matrices. Students will be able to calculate the rank of a matrix, eigen values and eigen vectors. At the end the course will expose students to 	Unit 1: Theory of equations	Remember, Understand, Apply, Analyze & Evaluate
				Unit 2: Algebra of matrices	Remember, Understand, Apply, Analyze & Evaluate
				Unit 3: Determinants of Matrices	Remember, Understand, Apply, Analyze & Evaluate

			<p>the different theorems of matrices.</p> <ul style="list-style-type: none"> Students will acquire knowledge on relation between roots and coefficients of any polynomial equation, to solve bi-quadratic and cubic equations when some conditions on roots of equations are given, knowledge on vector space and linear dependence and independence of vectors, spanning vector space. 	Unit 4: Matrices	Remember, Understand, Apply, Analyze & Evaluate
5	3 rd	STA-HC-3016 Sampling Distributions	<p>Students will acquire knowledge on:-</p> <ul style="list-style-type: none"> Order statistic and related sampling distributions. Parameter statistic, statistical hypothesis, basic principles underlying test of significance (large and small sample test) with applications. Derivation of exact sampling distribution of statistics like "t", Chi- square and "F". 	Unit 1: Order Statistics	Remember, Understand, Apply, Analyze & Evaluate
				Unit 2: Sampling Distributions	Remember, Understand, Apply, Analyze & Evaluate
				Unit 3: Exact sampling distributions	Remember, Understand, Apply, Analyze & Evaluate
				Unit 4: Sampling distribution	Remember, Understand, Apply, Analyze & Evaluate

6	3 rd	<p style="text-align: center;">STA-HC-3026</p> <p style="text-align: center;">Survey Sampling and Indian Official Statistics</p>	<p>Students will acquire knowledge on:</p> <ul style="list-style-type: none"> • Population, sample, difference Between census and sample survey. • Sampling error and non-sampling error. • The principles of sample survey and different techniques of drawing random sample such as simple random sampling, stratified random sampling, systematic sampling, cluster sampling, double sampling etc and situations where these are applicable. • Probability proportional to size sampling • Auxiliary variable and the use of it in ratio and regression method of estimation for estimating population parameters. • Sources of Official statistics, methods of collection of Official Statistics in India 	Unit 1: Survey Sampling	Remember, Understand, Apply, Analyze & Evaluate
				Unit 2: Stratified random sampling	Remember, Understand, Apply, Analyze & Evaluate
				Unit 3: Ratio and Regression Method of Sampling	Remember, Understand, Apply, Analyze & Evaluate
				Unit 4: Official Statistics	Remember, Understand, Apply, Analyze & Evaluate

			under MoSPI.		
7	3 rd	STA-HC-3036 Mathematical Analysis	<p>Students will acquire knowledge on:-</p> <ul style="list-style-type: none"> Representation of real numbers, identifying sequences of real numbers and their properties. Sequences and different test to study their convergence and divergence, Limits of sequence Infinite series and their convergence. Limits, continuity and differentiability Finite difference, divided difference, interpolation, extrapolation and different methods of interpolation Difference equation and their solutions. 	Unit 1: Real Analysis	Remember, Understand, Apply, Analyze & Evaluate
				Unit 2: Infinite Series	Remember, Understand, Apply, Analyze & Evaluate
				Unit 3: Limits, Continuity and Differentiability	Remember, Understand, Apply, Analyze & Evaluate
				Unit 4: Numerical Analysis	Remember, Understand, Apply, Analyze & Evaluate
8	3 rd	STA – SE – 3014 Statistical Data Analysis Using Software Packages	<p>Students will acquire knowledge on: -</p> <ul style="list-style-type: none"> How to handle data and its analysis using software packages MS excel, SPSS 	Unit 1: Graphical Representation	Remember, Understand, Apply, Analyze & Evaluate
				Unit 2: Report Generation	Remember, Understand, Apply, Analyze &

			<ul style="list-style-type: none"> • Loading data, plotting a graph, viz. histogram, box plot, stem leaf, frequency polygon, pie chart and ogive. • Generating automated reports: - Descriptive Statistics, correlation and line of regression • Random number generation and sampling procedures, curves. Application problems based on fitting of suitable distribution, normal probability plot. • Creating and managing statistical analysis projects, imports data, code, editing, and basics of statistical inferences, p-values and confidence intervals. 		Evaluate
				Unit 3: Fitting Curves	Remember, Understand, Apply, Analyze & Evaluate
				Unit 4: Analysis	Remember, Understand, Apply, Analyze & Evaluate
9	4 th	STA-HC-4016 Statistical Inference	Students will acquire knowledge on: <ul style="list-style-type: none"> • Idea of point estimation and criteria for a good estimator. • Cramer Rao inequality, Rao Blackwell and Lehman Scheff theorems and their 	Unit 1: Estimation	Remember, Understand, Apply, Analyze & Evaluate
				Unit 2: Methods of Estimation	Remember, Understand, Apply, Analyze & Evaluate

			<p>application in minimum variance bound estimator.</p> <ul style="list-style-type: none"> • Different methods of estimation • Statistical hypothesis, type I and type II errors. • The concept of optimum tests under different situations. • The concept of likelihood ratio test and its important properties. • Sequential Probability Ratio Test (SPRT). 	<p>Unit 3: Principles of test of significance</p>	<p>Remember, Understand, Apply, Analyze & Evaluate</p>
				<p>Unit 4: Principles of test of significance</p>	<p>Remember, Understand, Apply, Analyze & Evaluate</p>
10	4 th	<p>STA-HC-4026</p> <p>Linear Models</p>	<p>Students will acquire knowledge on:-</p> <ul style="list-style-type: none"> • Linear Estimation, use of Gauss-Markov setup in estimation of parameters, Gauss Markov theorem • Regression and simple linear regression model, testing of hypothesis in case of simple regression model. • Analysis of variance(ANOVA), Different type of models in 	<p>Unit 1: Gauss-Markov Set-up</p>	<p>Remember, Understand, Apply, Analyze & Evaluate</p>
				<p>Unit 2: Regression Analysis</p>	<p>Remember, Understand, Apply, Analyze & Evaluate</p>
				<p>Unit 3: Analysis of Variance</p>	<p>Remember, Understand, Apply, Analyze & Evaluate</p>
				<p>Unit 4: Model Checking</p>	<p>Remember, Understand, Apply, Analyze &</p>

			<p>ANOVA.</p> <ul style="list-style-type: none"> • How to carryout ANOVA and Analysis of Covariance for one way and two classified data. • How to predict from a fitted model 		Evaluate
11	4 th	STA-HC-4036 Statistical Quality Control	<p>Students will be able to understand:</p> <ul style="list-style-type: none"> • The meaning of quality and its dimension. • How the concept of quality arises since World War II. • How to construct control charts for variable sand attributes to determine whether the given quality of the product is under control or not. • Sampling inspection plan in product control. • The concept of six sigma 	Unit 1: Statistical Process Control	Remember, Understand, Apply, Analyze & Evaluate
				Unit 2: Control Charts for Variables	Remember, Understand, Apply, Analyze & Evaluate
				Unit 3: Acceptance Sampling Plan	Remember, Understand, Apply, Analyze & Evaluate
				Unit 4: Six-Sigma	Remember, Understand, Apply, Analyze & Evaluate
13	5 th	STA-HC- 5016	<p>Students will acquire knowledge n:-</p>	Unit 1: Probability Distributions	Remember, Understand, Apply, Analyze &

		Stochastic Processes and Queuing Theory	<ul style="list-style-type: none"> • Generating functions, bivariate probability generating functions, and Stationary Processes • Markov chains including the notion of Transition probability matrix, classification of States and chains. • Poisson process, its properties and application in real life problem. • Different types of queuing models and waiting time distribution 		Evaluate
				Unit 2: Markov Chains	Remember, Understand, Apply, Analyze & Evaluate
				Unit 3: Poisson Process	Remember, Understand, Apply, Analyze & Evaluate
				Unit 4: Queuing System	Remember, Understand, Apply, Analyze & Evaluate
14	5 th	STA-HC- 5026 Statistical Computing Using C/C++ Programming	<ul style="list-style-type: none"> • On the successful completion of this paper students will be able to illustrate the flowchart and design an algorithm for a given problem and to develop C programs using operators, develop conditional and iterative statements to write C programs, use data types to solve problems, decompose a problem into functions and synthesize a complete program, demonstrate the use of arrays, strings and structure in C language and they will be able to understand the concept of pointers. 	Unit 1: C Programming	Remember, Understand, Apply, Analyze & Evaluate
				Unit 2: Decision making and Arrays	Remember, Understand, Apply, Analyze & Evaluate

15	5 th	STA-HE- 5016 Operations Research	<p>At the end of this course students will be able to:</p> <ul style="list-style-type: none"> • Formulate and obtain the optimal solution for Linear Programming Problems by using graphical and simplex method which is used in decision making, Determine the optimal solution for Transportation problems, • Determine the best strategy and value of the given game model. • Upon successful completion of this course students will understand the need of inventory management, their types, characteristics etc. 	Unit 1: Operations Research	Remember, Understand, Apply, Analyze & Evaluate
				Unit 2: Transportation Problem	Remember, Understand, Apply, Analyze & Evaluate
				Unit 3: Game theory	Remember, Understand, Apply, Analyze & Evaluate
				Unit 4: Inventory Management	Remember, Understand, Apply, Analyze & Evaluate
16	5 th	STA-HE- 5026	<p>Students will acquire knowledge on:-</p> <ul style="list-style-type: none"> • Time series data, its application 	Unit 1: Introduction to Time Series	Remember, Understand, Apply, Analyze & Evaluate

		Time Series Analysis	<p>to various fields and components of time series.</p> <ul style="list-style-type: none"> • Estimation of trend, seasonal variation, cyclical variation and irregular variations using different methods. • Forecasting by exponential smoothing. 	Unit 2: Introduction to Time Series	Remember, Understand, Apply, Analyze & Evaluate
				Unit 3: Moving averages	Remember, Understand, Apply, Analyze & Evaluate
				Unit 4: Forecasting and smoothing to Time Series	Remember, Understand, Apply, Analyze & Evaluate
17	6 th	STA-HC- 6016 Design of Experiments	<p>Students will acquire knowledge on:</p> <ul style="list-style-type: none"> • Design of experiments, its terminology and basic principles. • Construction of standard designs such as Completely Randomized design, Randomized Block Design and Latin Square Design and their application to analyze experimental data using ANOVA technique. • Relative efficiency of CRD, RBD and LSD and analysis of RBD and LSD with one missing observation. 	Unit 1: Design of Experiments	Remember, Understand, Apply, Analyze & Evaluate
				Unit 2: Design of Experiments	Remember, Understand, Apply, Analyze & Evaluate
				Unit 3: Factorial Experiments	Remember, Understand, Apply, Analyze & Evaluate

			<ul style="list-style-type: none"> • Strip Plot Design, Split Plot Design and Incomplete Block Design. • Construction and analysis of factorial design, Confounding, construction of total and partially confounded design 		
18	6 th	STA-HC- 6026 Multivariate Analysis and Nonparametric Methods	<p>Students will acquire knowledge on:-</p> <ul style="list-style-type: none"> • Bi variate normal distribution along with their properties. • Multivariate normal distribution and their properties. • Partial and multiple correlation and their properties. • Non parametric method of testing of hypothesis. 	Unit 1: Bivariate and Multivariate Distributions	Remember, Understand, Apply, Analyze & Evaluate
				Unit 2: Multivariate Normal Distributions	Remember, Understand, Apply, Analyze & Evaluate
				Unit 3: Non-parametric Tests	Remember, Understand, Apply, Analyze & Evaluate
19	6 th	STA-HE- 6026 Demography and Vital Statistics	<p>Students will be able to know:</p> <ul style="list-style-type: none"> • The different sources for collection demographic data and its errors. • The use of balancing equation for population change. • Population composition and dependency ratio. 	Unit 1: Population Theory	Remember, Understand, Apply, Analyze & Evaluate
				Unit 2: Measurement of Mortality	Remember, Understand, Apply, Analyze & Evaluate
				Unit 3: Life Table	Remember, Understand, Apply, Analyze & Evaluate

			<ul style="list-style-type: none"> • The basic measures of mortality, fertility and population growth. • The concept of stable and Stationary population. • The concept of lifetable and their construction. 	Unit 4: Measurement of Fertility	Remember, Understand, Apply, Analyze & Evaluate
20	6 th	STA-HE- 6046 Project Work	<ul style="list-style-type: none"> • The aim of the course is to initiate students to write and present a statistical report, under the supervision of a faculty, on some area of human interest. The project work will provide hands on training to the students to deal with data emanating from some real-life situation and propel them to dwell on some theory or relate it to some theoretical concepts 		Analyze, Interpret.

14. b) BSc (Regular, Generic) Statistics

21	1 st	STA-HG-1016 Statistical Methods	Upon completion of this course, students will have acquired a robust understanding of fundamental statistical concepts and techniques. They will be able to:	Unit 1: Statistical Data	Remember, Understand, Apply, Analyze & Evaluate
				Unit 2: Measures of Central Tendency	Remember, Understand, Apply, Analyze &

			<ul style="list-style-type: none"> Understand and distinction between statistical population and sample, and proficiently handle both qualitative and quantitative data using appropriate measures and scales of measurement. Calculate and interpret measures of central tendency and dispersion to summarize and describe data distributions, enabling informed decision making. Utilize calculus of finite difference techniques, including interpolation and numerical integration, to approximate missing data points and integrate functions accurately. Analyze relations between two variable using scatter diagrams, correlation coefficients and linear regression models etc. Understand theory of attributes, assess data consistency, independence and association and apply measures to quantify relationships with categorical data sets. 		Evaluate
				Unit 3: Calculus of Finite Difference	Remember, Understand, Apply, Analyze & Evaluate
				Unit 4: Bivariate Data	Remember, Understand, Apply, Analyze & Evaluate
				Unit 5: Theory of Attributes	Remember, Understand, Apply, Analyze & Evaluate
22	2 nd	STA-HG-2016	Upon successful completion of this course, students will possess a comprehensive understanding of	Unit 1: Probability	Remember, Understand, Apply, Analyze & Evaluate

		Introductory Probability	<p>advanced probability theory and statistical distributions. They will be able to:</p> <ul style="list-style-type: none"> • Understand the foundations of probability theory, including random experiments, sample space, events, and algebra of events. Students will be proficient in calculating probabilities using classical, statistical, and axiomatic definitions, and applying concepts such as conditional probability, laws of addition and multiplication, independent events, and Bayes' theorem to solve real-world problems. • Demonstrate a deep understanding of discrete and continuous random variables, including probability mass functions, probability density functions, and cumulative distribution functions. Students will be able to compute expectations, variances, moments, and moment generating functions, and interpret their significance in practical contexts. • Grasp the concept of convergence in probability and its applications, including Chebyshev's inequality and the 	Unit 2: Random Variables	Remember, Understand, Apply, Analyze & Evaluate
				Unit 3: Convergence in Probability	Remember, Understand, Apply, Analyze & Evaluate
				Unit 4: Standard Distributions	Remember, Understand, Apply, Analyze & Evaluate

			<p>weak law of large numbers. Students will also be familiar with important limit theorems such as the De-Moivre Laplace theorem and the Lindeberg-Levy Central Limit Theorem.</p> <ul style="list-style-type: none"> Gain proficiency in standard probability distributions, including binomial, Poisson, geometric, negative binomial, hypergeometric, uniform, normal, exponential, beta, and gamma distributions. Students will learn to identify and apply appropriate distributions to model various real-world phenomena, enabling them to make accurate predictions and statistical inferences. 		
23	3 rd	<p>STA-HG-3016 Basics of Statistical Inference</p>	<p>Upon completing this course, students will acquire a profound understanding of statistical inference techniques and experimental design principles. They will be proficient in:</p> <ul style="list-style-type: none"> Estimating population parameters, constructing confidence intervals for parameters of a normal distribution. 	Unit 1: Tests of Hypothesis	Remember, Understand, Apply, Analyze & Evaluate
				Unit 2: Categorical Data Analysis	Remember, Understand, Apply, Analyze & Evaluate
				Unit 3: Analysis of Variance	Remember, Understand, Apply, Analyze & Evaluate

			<ul style="list-style-type: none">• Grasping the foundational concepts of hypothesis testing.• Conducting hypothesis tests for parameters of a normal distribution, including different non- parametric tests.• Analyzing categorical data through tests of proportions and tests of association using Chi-Square test along with understanding Yate's correction.• Performing ANOVA one way and two-way classifications along with a brief introduction to the fundamental principles of design of experiments, implementing the analysis of completely randomized designs and randomized complete block designs, with a focus on applications in bioassay experiments.		
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24	4 th	<p style="text-align: center;">STA-HG-4016 Applied Statistics</p>	<p>Upon completion of this course, students will have developed a comprehensive understanding of statistical methods and their applications in economics and demography. They will be able to:</p> <ul style="list-style-type: none"> • Understand the components of economic time series and decompose them into additive and multiplicative models, evaluating their respective merits and demerits, apply various methods for trend measurement as well as seasonal variations. • Define index numbers and evaluate their criteria for quality, constructing index numbers for prices and quantities, including the consumer price index, understand the uses and limitations of index numbers in economic analysis and decision-making. • Recognize the importance of statistical methods in industrial research and practice, particularly in controlling variations in product quality, determine tolerance limits, understand causes of variations, and implement control charts for variables and attributes. 	Unit 1: Time Series	Remember, Understand, Apply, Analyze & Evaluate
			Unit 2: Index Numbers		Remember, Understand, Apply, Analyze & Evaluate
			Unit 3: Statistical Quality Control		Remember, Understand, Apply, Analyze & Evaluate
			Unit 4: Demography		Remember, Understand, Apply, Analyze & Evaluate
			Unit 5: Demand Analysis		Remember, Understand, Apply, Analyze & Evaluate

			<ul style="list-style-type: none"> Gain familiarity with demographic methods, including measuring population, vital events rates and ratios, mortality rates, and fertility rates, interpret life tables and understand their uses in demographic analysis, as well as measure population growth rates. Explore the theory of consumption and demand, analyzing demand functions and elasticity of demand, determine elasticity of demand using the family budget method, interpret Lorenz curves and Gini coefficients, Engel's law and curve, and Pareto's law of income distribution. 		
25	1 st	STA-RC-1016 Statistical Methods	<p>Upon completion of this course, students will have acquired a robust understanding of fundamental statistical concepts and techniques. They will be able to:</p> <ul style="list-style-type: none"> Understand and distinction between statistical population and sample, and proficiently handle both qualitative and quantitative data using appropriate measures and scales of measurement. 	Unit 1: Statistical Data	Remember, Understand, Apply, Analyze & Evaluate
				Unit 2: Measures of Central Tendency	Remember, Understand, Apply, Analyze & Evaluate
				Unit 3: Calculus of Finite Difference	Remember, Understand, Apply, Analyze & Evaluate
				Unit 4: Bivariate Data	Remember, Understand, Apply, Analyze & Evaluate

			<ul style="list-style-type: none"> • Calculate and interpret measures of central tendency and dispersion to summarize and describe data distributions, enabling informed decision making. • Utilize calculus of finite difference techniques, including interpolation and numerical integration, to approximate missing data points and integrate functions accurately. • Analyze relations between two variable using scatter diagrams, correlation coefficients and linear regression models etc. • Understand theory of attributes, assess data consistency, independence and association and apply measures to quantify relationships with categorical data sets. 	Unit 5: Theory of Attributes	Remember, Understand, Apply, Analyze & Evaluate
26	2 nd	STA-RC-2016 Introductory Probability	<p>Upon successful completion of this course, students will possess a comprehensive understanding of advanced probability theory and statistical distributions. They will be able to:</p> <ul style="list-style-type: none"> • Understand the foundations of probability theory, including random experiments, sample 	Unit 1: Probability	Remember, Understand, Apply, Analyze & Evaluate
				Unit 2: Random Variables	Remember, Understand, Apply, Analyze & Evaluate
				Unit 3: Convergence in Probability	Remember, Understand, Apply, Analyze & Evaluate

			<p>space, events, and algebra of events. Students will be proficient in calculating probabilities using classical, statistical, and axiomatic definitions, and applying concepts such as conditional probability, laws of addition and multiplication, independent events, and Bayes' theorem to solve real-world problems.</p> <ul style="list-style-type: none"> • Demonstrate a deep understanding of discrete and continuous random variables, including probability mass functions, probability density functions, and cumulative distribution functions. Students will be able to compute expectations, variances, moments, and moment generating functions, and interpret their significance in practical contexts. • Grasp the concept of convergence in probability and its applications, including Chebyshev's inequality and the weak law of large numbers. Students will also be familiar with important limit theorems such as the De-Moivre Laplace theorem and the Lindeberg-Levy Central Limit Theorem. 	Unit 4: Standard Distributions	Remember, Understand, Apply, Analyze & Evaluate
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			<ul style="list-style-type: none"> Gain proficiency in standard probability distributions, including binomial, Poisson, geometric, negative binomial, hypergeometric, uniform, normal, exponential, beta, and gamma distributions. Students will learn to identify and apply appropriate distributions to model various real-world phenomena, enabling them to make accurate predictions and statistical inferences. 		
26	3 rd	STA-RC-3016 Basics of Statistical Inference	Upon completing this course, students will acquire a profound understanding of statistical inference techniques and experimental design principles. They will be proficient in:	Unit 1: Tests of Hypothesis	Remember, Understand, Apply, Analyze & Evaluate
			<ul style="list-style-type: none"> Estimating population parameters, constructing confidence intervals for parameters of a normal distribution. 	Unit 2: Categorical Data Analysis	Remember, Understand, Apply, Analyze & Evaluate
			<ul style="list-style-type: none"> Grasping the foundational concepts of hypothesis testing. Conducting hypothesis tests for parameters of a normal distribution, including different non- parametric 	Unit 3: Analysis of Variance	Remember, Understand, Apply, Analyze & Evaluate

			<p>tests.</p> <ul style="list-style-type: none"> Analyzing categorical data through tests of proportions and tests of association using Chi-Square test along with understanding Yate's correction. Performing ANOVA one way and two-way classifications along with a brief introduction to the fundamental principles of design of experiments, implementing the analysis of completely randomized designs and randomized complete block designs, with a focus on applications in bioassay experiments. 		
27	4 th	STA-RC-4016 Applied Statistics	<p>Upon completion of this course, students will have developed a comprehensive understanding of statistical methods and their applications in economics and demography. They will be able to:</p> <ul style="list-style-type: none"> Understand the components of economic time series and decompose them into additive and multiplicative models, 	Unit 1: Time Series	Remember, Understand, Apply, Analyze & Evaluate
				Unit 2: Index Numbers	Remember, Understand, Apply, Analyze & Evaluate
				Unit 3: Statistical Quality Control	Remember, Understand, Apply, Analyze & Evaluate

			<p>evaluating their respective merits and demerits, apply various methods for trend measurement as well as seasonal variations.</p> <ul style="list-style-type: none"> • Define index numbers and evaluate their criteria for quality, constructing index numbers for prices and quantities, including the consumer price index, understand the uses and limitations of index numbers in economic analysis and decision-making. • Recognize the importance of statistical methods in industrial research and practice, particularly in controlling variations in product quality, determine tolerance limits, understand causes of variations, and implement control charts for variables and attributes. • Gain familiarity with demographic methods, including measuring population, vital events rates and ratios, mortality rates, and fertility rates, interpret life tables and understand their uses in demographic analysis, as well as measure population growth rates. • Explore the theory of consumption and demand, analyzing demand functions and 	Unit 4: Demography	Remember, Understand, Apply, Analyze & Evaluate
				Unit 5: Demand Analysis	Remember, Understand, Apply, Analyze & Evaluate

			elasticity of demand, determine elasticity of demand using the family budget method, interpret Lorenz curves and Gini coefficients, Engel's law and curve, and Pareto's law of income distribution.		
28	5 th	STA-RE-5016 Operations Research	<p>Upon completion of this course, students will be able to:</p> <ul style="list-style-type: none"> Understand the foundational concepts and principles of Operation Research, identify and describe various types of OR problems and their real- world applications. Formulate mathematical models for LPP and apply graphical and simplex methods to find optimal solutions. Solve transportation problem using different methods such as the North West corner rule, Least Cost method and VAM. Analyze and apply game theory principles, including rectangular games and the maximin-minimax principle, to strategic 	Unit 1: Operations Research	Remember, Understand, Apply, Analyze & Evaluate
				Unit 2: Transportation Problem	Remember, Understand, Apply, Analyze & Evaluate
				Unit 3: Game theory	Remember, Understand, Apply, Analyze & Evaluate
				Unit 4: Inventory Management	Remember, Understand, Apply, Analyze & Evaluate

			<p>decision-making scenarios.</p> <ul style="list-style-type: none"> Evaluate inventory management systems and classify items using the ABC inventory system based on their importance and usage. Calculate Economic Order Quantity and determine optimal inventory levels considering various factors such as shortages and quantity discounts. Apply quantitative techniques to optimize decision making processes in business and operational contexts. 		
29	6 th	STA-RE-6026 Demography and Vital Statistics	<p>Upon completion of this course, students will have developed a comprehensive understanding of demography. They will be able to:</p> <ul style="list-style-type: none"> Gain familiarity with different sources for collection demographic data and its errors. Understand the use of balancing equation for population change. Understand the concept of 	Unit 1: Population Theory	Remember, Understand, Apply, Analyze & Evaluate
				Unit 2: Measurement of Mortality	Remember, Understand, Apply, Analyze & Evaluate
				Unit 3: Life Table	Remember, Understand, Apply, Analyze & Evaluate
				Unit 4: Measurement of Fertility	Remember, Understand, Apply, Analyze & Evaluate

			<p>Population composition and dependency ratio.</p> <ul style="list-style-type: none">• Calculate basic measures of mortality, fertility rates and population growth, Crude, Rates of natural increase, Pearl's Vital Index, Gross Reproduction Rate and Net Reproduction Rate.• Grasp the concept of stable and Stationary population.• Explore concept of life table and their construction.		
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15. a) BSc (Honours) Zoology

SL. NO.	SEMESTER	PAPER CODE & TITLE	COURSE OUTCOMES	UNIT/ CHAPTER	BLOOM'S TAXONOMY LEVEL
1	1 st	ZOO-HC-1016: Non-Chordates I: Protists To Pseudocoelomates	<ul style="list-style-type: none"> In this paper, students would have clear understanding of the concepts related to general characteristics and classification the phyla of Non-chordates. Students will also have hands on experience of specimen identification and slides of life cycles of the Non-chordates. 	Unit 1: Protista, Parazoa and Metazoa	Understand and Remember
				Unit 2: Porifera	Understand and Remember
				Unit 3: Cnidaria	Understand and Remember
				Unit 4: Ctenophora;	Understand and Remember
				Unit 5: Platyhelminthes	Understand and Remember
				Unit 6: Nematelminthes	Understand and Remember
		LAB		<ul style="list-style-type: none"> Identification of museum specimen, slide observation under microscope and study of life stages of specimens. 	Analyse and Evaluate
2	1 st	ZOO-HC-1026:	<ul style="list-style-type: none"> In this unit the students will 	Unit 1: Introduction to	Understand and Remember

		Principles Of Ecology	<p>learn the history of ecology. The student will have a clear understanding on the unique and group attributes of population: Density, natality, mortality, life tables, fecundity tables, survivorship curves, age ratio, sex ratio, dispersal and dispersion Exponential and logistic growth, equation and patterns, r and K strategies Population regulation - density-dependent and independent factors structures. The students will also learn another important topic “Community characteristics” and Applied Ecology in this course.</p> <ul style="list-style-type: none"> Students will understand the life survivorship curve in the population. Also able to determine the population density using quadrat method. 	Ecology,	
				Unit 2: Population	Understand and Remember
				Unit3:Community	Understand and Remember
				Unit4:Ecosystem	Understand and Remember
				Unit 5:Applied Ecology	Understand and Remember
		LAB	<ul style="list-style-type: none"> Study of life tables and plotting of survivorship curves of different Types, determination of population density in a natural/hypothetical community by quadrat method and study of an aquatic ecosystem 	Study, analyse and Evaluate	
3	2 nd	ZOO-HC-2016: Non-Chordates II: Coelomates	<ul style="list-style-type: none"> In this paper, students would have clear understanding of the concepts related to general characteristics and classification the phyla of Non-chordates: 	Unit 1: Introduction to Coelomates	Understand and Remember
				Unit 2: Annelida	Understand and Remember

			<p>Coelomates.</p> <ul style="list-style-type: none"> Students will also have hands on experience of specimen identification. 	Unit 3: Arthropoda	Understand and Remember
				Unit 4: Onychophora	Understand and Remember
				Unit 5: Mollusca	Understand and Remember
				Unit 6: Echinodermata	Understand and Remember
		LAB		<ul style="list-style-type: none"> Identification of museum specimen, slide observation under microscope and study of life stages of specimens. 	Study, Identify and Evaluate
4	2 nd	ZOO-HC-2026 Cell Biology	<ul style="list-style-type: none"> In this paper, the students are expected to learn the overview of cell with the structure and function of plasma membrane, mitochondria, nucleus, Golgi body, endoplasmic reticulum, cytoskeleton etc. Here, students would understand the process 	Unit 1: Over view of Cells	Understand and Remember
				Unit 2: Plasma Membrane	Understand and Remember
				Unit 3: Endomembrane System	Understand and Remember

			of cell division and cell signaling	Unit 4: Mitochondria and Peroxisomes	Understand and Remember
			<ul style="list-style-type: none"> To know the procedure of temporary and permanent slide representing the various stages of cell division (mitosis and meiosis). 	Unit5: Cytoskeleton	Understand and Remember
				Unit 6: Nucleus	Understand and Remember
				Unit 7: Cell Division	Understand and Remember
				Unit 8:Cell Signaling	Understand and Remember
		<ul style="list-style-type: none"> Study of various stages of meiosis, mitosis; Preparation of permanent slide to show the presence of Barrbody in human female blood cells; Preparation of permanent slide (DNA); 		Prepare, Identify and Evaluate	
LAB					
5	3 rd	ZOO-HC-3016 Diversity Of Chordata	<ul style="list-style-type: none"> In this paper, the students are expected to learn the general characteristics and outline classification of Chordata. The students will understand the general characteristics of 	Unit 1: Introduction to Chordates	Understand and Remember
				Unit 2: Protochordata	Understand, Remember and Apply

			<p>Hemichordata, Urochordata and Cephalochordata. The students will also study the different phylum of Chordata.</p> <ul style="list-style-type: none"> Students will also have hands on experience of museum specimen identification of chordates. 	Unit 3: Origin of Chordata,	Understand and Remember
				,Unit 4:Agnatha,	Understand and Remember
				Unit 5:Pisces	Understand and Remember
				Unit 6:Amphibia	Understand and Remember
				Unit 7:Reptilia	Understand and Remember
				Unit 8:Aves	Understand and Remember
				Unit9:Mammals	Understand and Remember
				Unit10:Zoogeography	Understand and Remember
			<ul style="list-style-type: none"> Identification of museum specimen of Chordates. 	Identify and Evaluate	
6	3 rd	ZOO-HC-3026: Animal Physiology: Controlling and Coordinating Systems	<ul style="list-style-type: none"> Students will be able to understand the human physiology by learning about the nervous system, reproductive system, endocrinology and muscle physiology 	Unit 1: Tissues	Understand and Remember
				Unit 2: Bone and Cartilage	Understand and Remember
				Unit 3: Nervous System	Understand and Remember

				Unit 4: Muscle	Understand and Remember
				Unit 5: Reproductive System	Understand and Remember
				Unit 6: Endocrine System	Understand and Remember
		LAB		<ul style="list-style-type: none"> Preparation of permanent slide by microtomy and study it. 	Prepare and Evaluate
7	3 rd	ZOO-HC-3036: Fundamentals of Biochemistry	<ul style="list-style-type: none"> The students are expected to learn about the biomolecules such as carbohydrate, lipid, protein and nucleic acid. The fundamental basis of enzyme kinetics would be learned in depth. To determine the functional groups of biomolecules; To understand the technique of protein separation by paper chromatography; To learn the enzyme action. 	Unit1:Carbohydrates	Understand and Remember
				Unit2:Lipids	Understand and Remember
				Unit3:Proteins	Understand and Remember
				Unit 4:NucleicAcids	Understand and Remember
				Unit5:Enzymes	Understand and Remember
		LAB		<ul style="list-style-type: none"> Qualitative tests of functional groups 	Apply, Analyze and Evaluate

				<p>in carbohydrates, proteins and lipids; Paper chromatography of amino acids;</p> <ul style="list-style-type: none"> • Action of salivary amylase under optimum conditions; • Effect of pH, temperature on the action of salivary amylase. 	
8	4 th	ZOO-HC-4016: Comparative Anatomy of Vertebrates	<ul style="list-style-type: none"> • On successful completion, students will be able to understand the comparative anatomy of Integumentary System, Skeletal System, Urinogenital System, Circulatory System, Nervous System, Respiratory System, Circulatory System, Urinogenital System, Nervous System, Sense Organs • Through the experiments students will be able to distinguish between the types of fish scales; disarticulated skeleton of Frog, Fowl, Rabbit; Know about the structure of various organs, know the Skeletal modifications in vertebrates learn to create project 	Unit 1: Integumentary System,	Understand and Remember
				Unit 2: Skeletal System	Understand and Remember
				Unit 3: Digestive System	Understand and Remember
				Unit 4: Respiratory System	Understand and Remember
				Unit 5: Circulatory System	Understand and Remember
				Unit 6: Urinogenital System	Understand and Remember

			report. Should be able to apply if and when required.		
				Unit 7:Nervous System	Understand and Remember
				Unit 8:Sense Organs	Understand and Remember
		LAB		<ul style="list-style-type: none"> • Study of placoid, cycloid and ctenoid scales through permanent slides/photographs • Disarticulated skeleton of Frog, Fowl, Rabbit Mammalian skulls: One herbivorous and one carnivorous animal Study of structure of any two organs (heart, lung, kidney, eye and ear). Project on skeletal modifications in vertebrates. 	Apply, Analyze and Evaluate
9	4 th	ZOO-HC-4026: Animal Physiology: Life Sustaining Systems	On successful completion, students will be able to understand the Physiology of Digestion; Physiology of Respiration; Renal Physiology; Components of blood and their functions; Structure and functions of	Unit 1: Physiology of Digestion	Understand and Remember
				Unit 2: Physiology of Respiration	Understand and Remember

		haemoglobin; Haemostasis; Physiology of Heart.	Unit 3:Renal Physiology	Understand and Remember
		Students will be able to determine the ABO blood group, perform quantitative analysis of haemoglobin; RBC and WBC; learn to prepare haemin crystal; learn to use phymomanometer.	Unit4:Blood	Understand and Remember
	LAB		Unit 5: Physiology of Heart	Understand and Remember
			<ul style="list-style-type: none"> • Determination of ABO Blood group Enumeration of red blood cells and white blood cells using haemocytometer • Estimation of haemoglobin using Sahli's haemoglobinometer Preparation of haemin crystals Recording of blood pressure using a sphygmomanometer • Examination of section so f mammalian esophagus, stomach, duode numileum, rectum 	Apply, Analyze and Evaluate

				liver, trachea, lung, kidney	
11	4 th	ZOO-HC-4036: Biochemistry of Metabolic Processes	<ul style="list-style-type: none"> Students will be able to know and understand the various biochemical pathways and biomolecules involved in the various pathways in metabolism of protein, carbohydrates, lipids and Oxidative Phosphorylation Students will be able to perform the estimation of protein, detection of SGOT and SGPT, the Acid and Alkaline phosphatase assay from serum/tissue ; learn about the enzymatic activity of Trypsin and Lipase 	Unit 1: Overview of Metabolism	Understand and Remember
				Unit 2: Carbohydrate Metabolism	Understand and Remember
				Unit 3: Lipid Metabolism	Understand and Remember
				Unit 4: Protein Metabolism	Understand and Remember
				Unit 5: Oxidative Phosphorylation	Understand and Remember
		LAB	<ul style="list-style-type: none"> Estimation of total protein in given solutions by Lowry's method. Detection of SGOT and SGPT in serum/tissue. To study the enzymatic activity of Trypsin and Lipase. Study of biological oxidation (SDH) 	Apply, Analyze and Evaluate	

				<ul style="list-style-type: none"> To perform the Acid and Alkaline phosphatase assay from serum/tissue. 	
12	5 th	ZOO-HC-5016 Molecular Biology	<ul style="list-style-type: none"> Students will be able to know about the nucleic acid and their structure, learn about the DNA Replication; Transcription; Translation; Post Transcriptional Modifications; Gene Regulation; DNA Repair Mechanisms and Regulatory RNAs. Students will be able to identify and explain about the polytene chromosomes, prepare liquid culture medium, estimate growth kinetics and quantitative estimation of DNA. 	Unit 1: Nucleic Acids	Understand and Remember
				Unit 2: DNA Replication	Understand and Remember
				Unit 3: Transcription	Understand and Remember
				Unit 4: Translation	Understand and Remember
				Unit 5: Post Transcriptional Modifications and Processing of Eukaryotic RNA	Understand and Remember
				Unit 6: Gene Regulation	Understand and Remember
				Unit 7: DNA Repair Mechanisms	Understand and Remember
				Unit 8: Regulatory RNAs	Understand and Remember
		LAB	<ul style="list-style-type: none"> Study of Polytene chromosomes 	Apply, Analyze and Evaluate	

				<p>Preparation of liquid culture medium(LB)and raise culture of <i>E.coli</i></p> <ul style="list-style-type: none"> • Estimation of the growth kinetics of <i>E. coli</i> by turbidity method Quantitative estimation DNA using colorimeter 	
13	5 th	ZOO-HC-5026 Principles of Genetics	<ul style="list-style-type: none"> • Students will be able to explain/describe Mendelian Genetics; : Linkage, Crossing Over and Chromosomal Mapping; Sex Determination; Extra-chromosomal Inheritance; Transposable Genetic Elements. • Students will be able to perform chi square tests, construct linkage maps, learn about pedigree and Mendelian Laws. 	Unit 1: Mendelian Genetics and its Extension	Understand and Remember
				Unit 2: Linkage, Crossing Over and Chromosomal Mapping	Understand and Remember
				Unit3: Mutations	Understand and Remember
				Unit 4: Sex Determination	Understand and Remember
				Unit 5: Extra-chromosomal Inheritance	Understand and Remember
				Unit 6: Polygenic Inheritance	Understand and Remember

				Unit 7: Recombination in Bacteria and Viruses	Understand and Remember
				Unit 8: Transposable Genetic Elements	Understand and Remember
		LAB		<ul style="list-style-type: none"> • Study the Mendelian laws and gene interactions. Chi-square analyses using seeds/beads/<i>Drosophila</i>. Linkage maps based on data from conjugation, transformation and transduction. • Linkage maps based on data from <i>Drosophila</i> crosses. • Study of human karyotype (normal and abnormal). Pedigree analysis of some human inherited traits. 	Apply, Analyze and Evaluate
14	5 th	ZOO-HE-5016 Computational Biology and	<ul style="list-style-type: none"> • After completion of this course the students are expected to 	Unit 1: Introduction to Bioinformatics	Understand and Remember

		Biostatistics	<p>know the basics of Bioinformatics, Biological databases, learn to retrieve data from the databases. They will be able to understand and perform sequence alignment.</p> <ul style="list-style-type: none"> Students will be able to use various statistical and bioinfo tools. 	Unit 2: Biological Databases	Understand and Remember
				Unit 3: Data Generation and Data Retrieval	Understand and Remember
				Unit 4: Basic Concepts of Sequence Alignment	Understand and Remember
				Unit 5: Applications of Bioinformatics	Understand and Remember
				Unit 6: Biostatistics	Understand and Remember
		LAB		<ul style="list-style-type: none"> Accessing biological databases Retrieval of nucleotide and protein sequences from the databases. Perform (BLAST) and interpret the output Predict the structure of protein from its amino acid sequence. To perform a “two-sample t- test”. Graphical 	Apply, Analyze and Evaluate

				Representation of Statistical data	
15	5 th	ZOO-HE-5036 Endocrinology	<ul style="list-style-type: none"> Students will be able to know about the basics of endocrinology, the endocrine glands, : Epiphysis, Hypothalamo-hypophysial Axis. They will be able to know and understand the regulation of hormone action. Students will be able to perform dissection of endocrine glands, identify the different endocrine glands from slides. 	Unit 1: Introduction to Endocrinology	Understand and Remember
				Unit 2: Epiphysis, Hypothalamo-hypophysial Axis	Understand and Remember
				Unit3:Peripheral Endocrine Glands	Understand and Remember
				Unit4: Regulation of Hormone Action	Understand and Remember
		LAB	<ul style="list-style-type: none"> Dissect and display of Endocrine glands in laboratory bred rat Study of the permanent slides of all the endocrine glands Demonstration of Castration/ovariectomy in laboratory bred rat 	Apply, Analyze and Evaluate	

16	6 th	ZOO-HC-6016 Developmental Biology	<ul style="list-style-type: none"> Students will be able to know and understand about the process of embryonic development; the stages of development. Students will also be able to know about placental structure and function and extraembryonic membranes. Students will be able to identify the stages, different section of placenta. They will be able to prepare report on embryonic development. 	Unit1: Introduction	Understand and Remember
				Unit 2: Early Embryonic Development	Understand and Remember
				Unit 3: Late Embryonic Development	Understand and Remember
				Unit 4: Post Embryonic Development	Understand and Remember
				Unit 5: Implications of Developmental Biology	Understand and Remember
				LAB	<ul style="list-style-type: none"> Study of whole mounts and sections of developmental stages of frog through permanent slides Study of whole mounts of developmental stages of chick through permanent slides Study of the developmental stages and life cycle

				<p>of <i>Drosophila</i> from stock culture</p> <ul style="list-style-type: none"> • Study of different sections of placenta • Project report on <i>Drosophila</i> culture/chick embryo development 	
17	6 th	ZOO-HC-6026 Evolutionary Biology	<ul style="list-style-type: none"> • Students will be able to learn Life's Beginnings; Evidences of Evolution; Sources of variations; Population genetics; Extinctions; Origin and evolution of manl. They will also be able to know and understand Phylogenetic trees. • Students will be to use Hardy Weinberg Law. They will be able to construct and analyse phylogenetic trees. They will know and understand homology and analogy. 	Unit 1: Life's Beginnings	Understand and Remember
				Unit 2: Historical review of evolutionary concept.	Understand and Remember
				Unit 3: Evidences of Evolution	Understand and Remember
				Unit 4: Sources of variations	Understand and Remember
				Unit 5: Population genetics	Understand and Remember

				Unit 6: Product of evolution	Understand and Remember
				Unit 7: Extinctions	Understand and Remember
				Unit 8: Origin and evolution of man;	Understand and Remember
				Unit9: Phylogenetic trees	Understand and Remember
		LAB		<ul style="list-style-type: none"> • Study of fossils from models/pictures • Study of homology and analogy from suitable specimens • Study and verification of Hardy-Weinberg Law by chi square analysis • Graphical representation and interpretation of data of height/weight of a sample of 100 	Apply, Analyze and Evaluate

				<p>humans in relation to their age and sex.</p> <ul style="list-style-type: none"> • Construction of phylogenetic trees with the help of bioinformatics tools(Clustal X, Phylip, NJ) and its interpretation. 	
18	6 th	ZOO-HE-6016 Biology of Insecta	<ul style="list-style-type: none"> • Students will be able to know and understand the General Morphology of Insects, their characters and taxonomic classifications. They will also be able to learn about the plants and insect interaction and about the insect society. • Students will be able to identify insects from different orders on the basis of their characters. They will know about the different types of insect body parts. The students will know the techniques for collection, preservation and identification of various insects. 	Unit 1: Introduction	Understand and Remember
				Unit 2: Insect Taxonomy	Understand and Remember
				Unit 3: General Morphology of Insects	Understand and Remember
				Unit 4: Insect Society	Understand and Remember
				Unit 5: Insect Plant Interaction	Understand and Remember
				Unit 6: Insects as Vectors	Understand and Remember
		LAB	<ul style="list-style-type: none"> • Study of one specimen from each 		

				<p>insect order</p> <ul style="list-style-type: none"> • Study of different kinds of antennae, legs and mouth parts of insects • Study of head. • Study of insect wings and their venation. • Study of insect spiracles Methodology of collection, preservation and identification of insects. • Study of any three insect pests and their damages • Study of any three beneficial insects and their products 	Apply, Analyze and Evaluate
19	6 th	ZOO-HE-6046 Wild Life Conservation and Management	<ul style="list-style-type: none"> • After successful completion of the course, students would have learnt about Evaluation and management of wild life; Management of habitats; Population estimation; Management planning of wild life in protected areas; Management of excess 	Unit 1: Introduction to Wild Life	Understand and Remember
				Unit 2: Evaluation and management of wild life	Understand and Remember
				Unit 3: Management of	Understand and Remember

			<p>population.</p> <ul style="list-style-type: none"> Students will be able to identify flora, mammalian fauna, avian fauna, herpeto-fauna, use of basic equipment's needed in wildlife studies use, care and maintenance. They will be able to know different field techniques for flora and fauna. 	habitats	
				Unit 4: Population estimation	Understand and Remember
				Unit 5: Management planning of wild life in protected areas	Understand and Remember
				Unit 6: Management of excess population	Understand and Remember
				Unit 8: Protected areas	Understand and Remember
		LAB		<ul style="list-style-type: none"> Identification of flora, mammalian fauna, avian fauna, herpeto-fauna Demonstration of basic equipment needed in wildlife studies use, care and maintenance Familiarization and study of animal evidences in the field 	Apply, Analyze and Evaluate

				<ul style="list-style-type: none"> • Demonstration of different field techniques for flora and fauna • PCQ, Ten tree method, Circular, Square & rectangular plots, Parker's & Stepan dot her methods for ground cover assessment, Tree canopy cover assessment, Shrub cover assessment. • Trail/transect monitoring for abundance and diversity estimation of mammals and bird 	
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15. b) BSc (Regular, Generic) Zoology

20	1 st	ZOO-RC-1016 Animal Diversity	<ul style="list-style-type: none"> • In this paper, students would have clear understanding of the concepts related to general characteristics and classification the phyla of Non-chordates and chordates. Students will also be able to know about the classification upto the order 	Unit 1: Kingdom Protista,	Understand and Remember
				Unit 2: Phylum Porifera	Understand and Remember
				Unit 3: Phylum Cnidaria	Understand and

			level.		Remember
			<ul style="list-style-type: none"> Students will also have hands on experience of specimen identification, life stages, and key for Identification of poisonous and non-poisonous snakes 	Unit 4:Phylum Platyhelminthes	Understand and Remember
				Unit 5: Phylum Nematelminthes	Understand and Remember
				Unit 6:Phylum Annelida	Understand and Remember
				Unit 7:Phylum Arthropoda	Understand and Remember
				Unit 8: Phylum Mollusca	Understand and Remember
				Unit 9: Phylum Echinodermata	Understand and Remember
				Unit 10: Protochordates	Understand and Remember
				Unit 11: Agnatha	Understand and Remember
				Unit 12: Pisces	Understand and Remember

				Unit14: Reptiles	Understand and Remember
				Unit15: Aves	Understand and Remember
				Unit17: Mammals	Understand and Remember
		LAB		Study of museum specimen belonging to different phyla, slide observation under microscope and study of life stages of specimens, Key for Identification of poisonous and non-poisonous snakes.	Analyse and Evaluate
21	2 nd	ZOO-RC-2016 Comparative Anatomy and Developmental Biology of Variables	<ul style="list-style-type: none"> On successful completion, students will be able to understand the comparative anatomy of Integumentary System, Skeletal System, Urinogenital System, Circulatory System, Nervous System, Respiratory System, Circulatory System, Urinogenital System, Nervous 	Unit 1: Integumentary System	Understand and Remember
				Unit 2: Skeletal System	Understand and Remember
				Unit 3: Digestive System	Understand and Remember

			<p>System, Sense Organs</p> <ul style="list-style-type: none"> Students will understand the different development stages and the control of the development. Students will also have hands on experience on the osteological structures like mammalian skull, carapace, plastron and skeleton of fowl and rabbit; structure and types of placenta. Students will also be able to identify the developmental stages of frog from study of permanent slides. 	Unit 4: Respiratory System	Understand and Remember
				Unit 5: Circulatory System	Understand and Remember
				Unit 6: Urinogenital System	Understand and Remember
				Unit 7: Nervous System	Understand and Remember
				Unit 8: Sense Organs	Understand and Remember
				Unit 9: Early Embryonic Development	Understand and Remember
				Unit 10: Late Embryonic Development	Understand and Remember
				Unit 11: Control of Development	Understand and Remember
		LAB		1. Osteology: a) Disarticulated skeleton of fowl and rabbit	

				<p>b) Carapace and plastron of turtle/tortoise</p> <p>c) Mammalian skulls: One herbivorous and one carnivorous animal.</p> <p>2. Frog - Study of developmental stages - whole mounts and sections through permanent slides – cleavage stages, blastula, gastrula, neurula, tail bud stage, tadpole external and internal gill stages.</p> <p>3. Study of the different types of placenta- histological sections through permanent slides or photomicrographs.</p> <p>4. Examination of gametes - frog/rat - sperm and ova through permanent slides or photomicrographs.</p>	Study, analyse and Evaluate
22	3 rd	ZOO-RC-3016 Physiology and Biochemistry	<ul style="list-style-type: none"> In this paper, students would have clear understanding of the concepts related to nervous muscular system, digestion, respiration, excretion, the cardiovascular system, reproduction and endocrine glands. Students will be able to know and understand the various biochemical pathways and 	Unit 1: Nerve and muscle	Understand and Remember
				Unit2: Digestion	Understand and Remember
				Unit3: Respiration	Understand and Remember
				Unit 4: Excretion	Understand and

			<p>biomolecules involved in the various pathways in metabolism of protein, carbohydrates, lipids and enzymes.</p> <ul style="list-style-type: none"> Students will be able to prepare hemin crystals. Students will know about the histological structure of various endocrine glands, structure of other visceral organs, bone and cartilage. They will also be able to perform qualitative analysis to identify functional groups of carbohydrates in given solutions, Estimation of total protein and activity of salivary amylase. 		Remember
				Unit 5: Cardiovascular system	Understand and Remember
				Unit 6: Reproduction and Endocrine Glands	Understand and Remember
				Unit 7: Carbohydrate Metabolism	Understand and Remember
				Unit 8: Lipid Metabolism	Understand and Remember
				Unit 9: Protein metabolism	Understand and Remember
				Unit 10: Enzymes	Understand and Remember
					Study, Identify and

		LAB		<p>1. Preparation of hemin crystals</p> <p>2. Study of permanent histological sections of mammalian pituitary, thyroid, pancreas, adrenal gland</p> <p>3. Study of permanent slides of spinal cord, duodenum, liver, lung, kidney, bone, cartilage</p> <p>4. Qualitative tests to identify functional groups of carbohydrates in given solutions (Glucose, Fructose, Sucrose, Lactose)</p> <p>5. Estimation of total protein in given solutions by Lowry's method.</p> <p>6. Study of activity of salivary amylase under optimum conditions</p>	Evaluate
23	4 th	ZOO-RC-4016 Genetics and Evolutionary Biology	<ul style="list-style-type: none"> In this paper, the students are expected to learn the overview of genetics and various topics related to genetics like linkage, crossing over, chromosomal mapping, mutations, sex 	<p>Unit 1: Introduction to Genetics</p> <p>Unit 2: Mendelian Genetics and its Extension</p>	<p>Understand and Remember</p> <p>Understand and Remember</p>

			<p>determination, etc.</p> <ul style="list-style-type: none"> Students will be able to learn theories and evidences of Evolution; processes of evolutionary chance, species concept, macroevolution and extinction. Students will be able to understand Mendelian Inheritance and gene interactions (Non Mendelian Inheritance) using suitable examples. Students will be able to understand linkage, recombination, gene mapping using the data. In the evolutionary biology practical part, students will be able to understand the fossil evidences from pictures together with different adaptive radiation phenomenon. The visit to Natural history museum will inculcate in the minds of the students the different fossil study and will the process of evolutionary biology 	<p>Unit 3: Linkage, Crossing Over and Chromosomal Mapping</p>	<p>Understand and Remember</p>
				<p>Unit4: Mutations</p>	<p>Understand and Remember</p>
				<p>Unit 5: Sex Determination</p>	<p>Understand and Remember</p>
				<p>Unit 6: History of Life</p>	<p>Understand and Remember</p>
				<p>Unit 7: Introduction to Evolutionary Theories</p>	<p>Understand and Remember</p>
				<p>Unit 8: Direct Evidences of Evolution</p>	<p>Understand and Remember</p>
				<p>Unit 9: Processes of Evolutionary Change</p>	<p>Understand and Remember</p>
				<p>Unit 10: Species Concept</p>	<p>Understand and Remember</p>
				<p>Unit11: Macro-evolution</p>	<p>Understand and Remember</p>
				<p>Unit 12: Extinction</p>	<p>Understand and Remember</p>
				<p>1. Study of Mendelian Inheritance and gene</p>	<p>Prepare, Identify and Evaluate</p>

		LAB		<p>interactions (Non Mendelian Inheritance) using suitable examples. Verify the results using Chi-square test.</p> <p>2. Study of Linkage, recombination, gene mapping using the data.</p> <p>3. Study of Human Karyotypes (normal and abnormal).</p> <p>4. Study of fossil evidences from plaster cast models and pictures</p> <p>5. Study of homology and analogy from suitable specimens/pictures</p> <p>6. Charts:</p> <p>a) Phylogeny of horse with diagrams/ cut outs of limbs and teeth of horse ancestors</p> <p>b) Darwin's Finches with diagrams/ cut outs of beaks of different species</p> <p>7. Visit to Natural History Museum and submission of report</p>	
24	5 th	ZOO-RE-5026	<ul style="list-style-type: none"> In this paper, the students are expected to learn general 	Unit 1: Introduction to Host-parasite Relationship	Understand and Remember

		Applied Zoology	<p>concept of Introduction to Host-parasite Relationship, Epidemiology of Diseases, Parasitic Helminthes, Insects of Economic as well as medical Importance. This paper will enable the students to have a concept on animal husbandry, poultry farming and fish technology.</p> <ul style="list-style-type: none"> In the Lab, students will study the life stages of different disease causing organism through permanent slides. Also it will enable to study insect damage to different plant parts/stored grains through damaged products/photographs. A visit to poultry farm or animal breeding centre will inculcate the minds of the students the scientific knowledge of setting a farm. 	Unit 2: Epidemiology of Diseases	Understand,Remember and Apply
				Unit 3: Rickettsiae and Spirochaetes	Understand and Remember
				Unit 4: Parasitic Protozoa	Understand and Remember
				Unit 5: Parasitic Helminthes	Understand and Remember
				Unit 6: Insects of Economic Importance	Understand and Remember
				Unit 7: Insects of Medical Importance	Understand and Remember
				Unit 8: Animal Husbandry	Understand and Remember
				Unit 9: Poultry Farming	Understand and Remember
				Unit 10: Fish Technology	Understand and Remember
		LAB		1. Study of Plasmodium vivax, Entamoeba histolytica, Trypanosoma gambiense, Ancylostoma duodenale and Wuchereria bancrofti and their life stages through permanent	Identify and Evaluate

				<p>slides/photomicrographs or specimens.</p> <p>2. Study of arthropod vectors associated with human diseases: Pediculus, Culex, Anopheles, Aedes and Xenopsylla.</p> <p>3. Study of insect damage to different plant parts/stored grains through damaged products/photographs.</p> <p>4. Identifying feature and economic importance of Helicoverpa (Heliothis) armigera, Papilio demoleus, Pyrilla perpusilla, Callosobruchus chinensis, Sitophilus oryzae and Tribolium castaneum</p> <p>5. Visit to poultry farm or animal breeding centre. Submission of visit report</p> <p>6. Maintenance of fresh water aquarium</p>	
25	6 th	ZOO-RE-6016 Aquatic Biology	<ul style="list-style-type: none"> In this paper, the students are expected to learn the general concept of Aquatic Biology. The paper will help the students to understand about marine biology, freshwater biology and also the different strategies to manage the 	Unit 1: Aquatic Biomes	Understand and Remember
				Unit 2: Freshwater Biology	Understand and Remember
				Unit 3: Marine Biology	Understand and Remember

			<p>aquatic resources.</p> <ul style="list-style-type: none"> In the Lab, students will study and identify important macrophytes, phytoplanktons and zooplanktons present in a pond/ Beel water system. They will be able to determine the amount of Turbidity/transparency, Dissolved Oxygen, Free Carbon dioxide, Alkalinity (carbonates & bicarbonates) in water collected from a nearby lake/ water body. A visit to any Sewage treatment plant/Marine bio-reserve/Fisheries Institutes will enhance them with more practical knowledge of the paper. 	<p>Unit 4: Management of Aquatic Resources</p>	<p>Understand and Remember</p>
	LAB			<ol style="list-style-type: none"> Determine the area of a lake using graphimetric and gravimetric method. Identify the important macrophytes, phytoplanktons and zooplanktons present in a pond/ Beel water system. Determine the amount of Turbidity/transparency, Dissolved Oxygen, Free Carbon dioxide, Alkalinity (carbonates & bicarbonates) in water collected from a nearby lake/ waterbody. Instruments used in limnology (Secchi disc, Van Dorn Bottle, Conductivity meter, Turbidity meter, PONAR grab sampler) and their significance. A Project Report on a visit to a Sewage treatment plant/Marine bio-reserve/Fisheries Institutes 	<p>Prepare and Evaluate</p>

26	3 rd	ZOO-SE-3014 Ornamental Fish & Fisheries	<ul style="list-style-type: none"> On successful completion, students will be able to understand the Ornamental Fish Diversity of North East India. Aquarium plant diversity in the wetland of Assam. Construction and management of Home Aquarium. Natural feed of Ornamental Fish Students will also have hands on Identification of Ornamental Fish Culture of Indigenous ornamental fish in Aquarium. Students will be able to estimation of Physico-chemical characteristics of Aquarium water 	Unit: 1 Ornamental Fish Diversity of North East India.	Understand and Remember
				Unit 2: Aquarium plant diversity in the wetland of Assam.	Understand and Remember
				Unit 3: Construction and management of Home Aquarium.	Understand and Remember
				Unit 4: Natural feed of Ornamental Fish	Understand and Remember
				Unit 5: Strategies for maintenance of natural colour of Ornamental Fish	Understand and Remember
				Unit 6: Natural Breeding of Tricogaster species	Understand and Remember
				Unit 7: Health management of Ornamental Fish	Understand and Remember
				Unit 8: Feed formulation of Ornamental Fish	Understand and Remember
				Unit 9: Development of Biological filtration in	Understand and Remember

				Aquarium	
				Unit 10: Pure culture of planktons	Understand and Remember
		LAB		<p>Identification of Ornamental Fish Culture of Indigenous ornamental fish in Aquarium</p> <p>Estimation of Physico-chemical characteristics of Aquarium water</p> <p>Biological filter for removal of Ammonia from Aquarium</p> <p>Culture of Planktons</p>	Study, analyse and Evaluate
27	4 th	ZOO-SE-4014 Apiculture	<ul style="list-style-type: none"> On successful completion, students will be able to understand the Biology of Bees, Rearing of Bees, Diseases and Enemies and Entrepreneurship in Apiculture Students will also have hands on Identification of Life cycle of honey bees. 	<p>Unit 1: Biology of Bees History, Classification and Biology of Honey Bees Social Organization of Bee Colony</p>	Understand and Remember
				<p>Unit 2: Rearing of Bees Artificial Bee rearing (Apiary), Beehives–Newton and Langstroth Bee Pasturage Selection of Bee Species for Apiculture Bee Keeping Equipment Methods of Extraction of</p>	Understand and Remember

				Honey (Indigenous and Modern)	
				Unit 3: Diseases and Enemies Bee Diseases and Enemies Control and Preventive measures	Understand and Remember
				Unit 4: Bee Economy Products of Apiculture Industry and its Uses (Honey, Bees Wax, Propolis), Pollen etc	Understand and Remember
				Unit 5: Entrepreneurship in Apiculture Bee Keeping Industry–Recent Efforts, Modern Methods in employing artificial Bee hives for cross pollination in horticultural gardens	Understand and Remember
		LAB		Identification of Life cycle of honey bees.	Study, analyse and Evaluate
28	5 th	ZOO-SE 5014 Non-Mulberry Sericulture	<ul style="list-style-type: none"> On successful completion, students will be able to understand the Sericulture: Definition, history and present status of Mulberry and Non- 	Unit 1: Introduction Sericulture: Definition, history and present status of Mulberry and Non-Mulberry Sericulture; Silk route Varieties of Silk; Types and	Understand and Remember

			<p>Mulberry Sericulture; Silk route Varieties of Silk. The students will be able to understand the rearing of Silkworms (Eri and Muga</p>	<p>distribution of non-mulberry or wild or vanyasericigenous insects in N-E India</p>	
			<ul style="list-style-type: none"> • Rearing Operation: Rearing house/Site and rearing appliances. The students will be able to understand the pests of eri and muga silkworm 	<p>Unit 2: Biology of Non-mulberry Silkworm: Life cycle of silkworm- Eri and Muga Structure of silk gland and Nature of Silk</p>	<p>Understand and Remember</p>
			<ul style="list-style-type: none"> • Students will also have hands on Identification of Life cycle of silkworm- Eri and Muga. And also Identification of Mulberry and Non-Mulberry Silkworms 	<p>Unit 3: Rearing of Silkworms (Eri and Muga Rearing Operation: Rearing house/Site and rearing appliances. Disinfectants: Formalin, bleaching powder. Rearing technology: Early age and Late age rearing. Environmental conditions in rearing-Temperature, Humidity, Light and Air Types of mountages Harvesting and storage of cocoons Spinning and Reeling of silk</p>	<p>Understand and Remember</p>
				<p>Unit 4: Pests and Diseases: Pests of eri and muga silkworm Pathogenesis of eri and muga silkworm diseases: Protozoan, viral, fungal and bacterial Prevention and control</p>	<p>Understand and Remember</p>

				measures of pests and diseases	
				Unit 5: Entrepreneurship in Non-Mulberry Sericulture: Varieties of Non-Mulberry Silk products and economics in India Prospectus of Non-Mulberry Sericulture in India: Non-Mulberry Sericulture industry in different states, employment generation and potential Visit to various sericulture Govt. /Private Farm/ Centers.	Understand and Remember
		LAB		Identification of Life cycle of silkworm- Eri and Muga. Identification of Mulberry and Non-Mulberry Silkworms.	Study, analyse and Evaluate

16. BSc (Regular) Geology

SL. NO.	SEMESTER	PAPER CODE & TITLE	COURSE OUTCOMES	UNIT/ CHAPTER	BLOOM'S TAXONOMY LEVEL
1	1 st	GLG-RC 1016 General Geology and Structural Geology	<ul style="list-style-type: none"> This course provides as a foundation of Geology by providing an understanding about the origin and evolution of the Earth. This course helps to know about various components of the Earth and also its internal structure. This course will help to give a basic idea of rocks available on Earth and also to understand the role played by internal and external agents on transforming the physical features of the Earth. This will help the students to recognize and describe the different geological structures along with basic ideas of how to map them in the field. 	General Geology	Remember, Understand, Analyse
				Structural Geology	Remember, Understand, Analyse
				Practical	Remember, Understand, Apply
2	2 nd	GLG-RC-2016 Crystallography and Mineralogy	<ul style="list-style-type: none"> This course will help to understand the basic concepts needed to identify a crystal. The learner is expected to be able to describe a crystal structure in terms of atom positions, unit cells and crystal 	Crystallography	Remember, Understand, Analyse
				Mineralogy	Remember, Understand, Analyse

			<p>symmetry. This unit will help to identify the common rock forming minerals and provide knowledge on the structural, chemical and physical and optical characteristics of minerals.</p>	Optical Mineralogy	Remember, Understand, Analyse
				Practical	Remember, Understand, Apply
3	3 rd	GLG-RC-3016 Petrology	<ul style="list-style-type: none"> This course will help to understand how rocks melt and crystallize. This unit will enhance the knowledge of how a rock undergoes changes when exposed to various physicochemical environment inside as well as on the surface of the earth. This will help to identify igneous, sedimentary and metamorphic rocks and their different structures, textures and mode of occurrence. 	Igneous Petrology	Remember, Understand, Analyse
				Sedimentary Petrology	Remember, Understand, Analyse
				Metamorphic Petrology	Remember, Understand, Analyse
				Practical	Remember, Understand, Apply
4	4 th	GLG-RC-4016 Stratigraphy and Palaeontology	<ul style="list-style-type: none"> This course will help to study the subdivision of sequence of rock strata in the Indian subcontinent. This unit will help to correlate sequence of rock with rock strata elsewhere. Study of Palaeontology will help to describe the world's past biodiversity and how the living organisms adapted to changing 	Principles of Stratigraphy	Remember, Understand, Analyse
				Indian Stratigraphy	Remember, Understand, Analyse
				Palaeontology	Remember, Understand, Analyse

			environment. This will help to know about fossils and their mode of preservations. Study of fossils will help to develop new ideas about evolution and ecology.	Practical	Remember, Understand, Apply
5	5 th	GLG-RE-5016 Economic Geology and Hydrogeology	<ul style="list-style-type: none"> This course will help to guide the exploration for mineral resources and determine which deposits are economically worthwhile. This unit will help to understand the various processes of formation of economic minerals, their mode of occurrence, origin and uses. Study about Hydrogeology will help to gain knowledge about subsurface soil and rock permeability and groundwater movement. Groundwater is an essential part of human life and this course will help to understand the occurrence of groundwater below the surface. 	Economic Geology and Prospecting	Remember, Understand, Analyse
				Hydrogeology	Remember, Understand, Analyse
				Practical	Remember, Understand, Apply
6	6 th	GLG-RE-6016 Elements of Applied Geology	<ul style="list-style-type: none"> This course will help to understand the role of geology in the Civil Engineering Structures such as Dams, Tunnels, Roads and Bridges. This unit will help to understand interaction of humans with geologic environment. 	Elements of Applied Geology	Remember, Understand, Analyse
				Practical	Remember, Understand, Apply

17. Bachelor of Science in Information Technology (BScIT)

SL. NO.	SEMESTER	PAPER CODE & TITLE	COURSE OUTCOMES	UNIT/ CHAPTER	BLOOM'S TAXONOMY LEVEL
1	1 st	ITB-HC-1016 Computer Fundamentals and Programming	<ul style="list-style-type: none"> Now computer use has become an essential skill to have. Whether we need to know how to complete school work, get a job, or for personal use; knowing the basics functions is essential. Computer Fundamental is the knowledge and ability to use computers and technology efficiently. Computer fundamental can also refer to the comfort level someone has with using computer programs and other applications that are associated with computers. Programming is important for speeding up the input and output processes in a machine. Programming is important to automate, collect, manage, calculate, and analyze processing of data and information accurately. Programming is important to create software and applications that help computer and mobile users in daily life. Due to all these reasons, it's really important to learn how to 	Unit 1: Fundamentals	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 2: Introduction to C	Remember, Understanding, Apply , Analyse, Evaluate
				Unit 3: Arrays and pointers	Understanding, Apply, Analyse, Evaluate
				Unit 4: Searching and Sorting	Understanding ,Apply , Analyse, Evaluate
				Unit 5: Structures and Files	Understanding ,Apply , Analyse, Evaluate
				LABORATORY	Remember, Understanding ,Apply , Analyse, Evaluate

			use programming languages in our daily life.		
2	1 st	ITB-HC-1026 MATHEMATICS- I	<ul style="list-style-type: none"> This paper gives the depth knowledge of sequence and series as well as infinite series and comparison test ,ratio test etc. Geometric representation of complex numbers the Argand palne. Study about De Moiver's theorem, Gregor's series , Hyperbolic functions. Depth study about Abstract algebra i.e. Group theory, Ring Theory etc. 	Unit 1: Sets, Relations and Functions	Understanding, Apply , Analyse, Evaluate
				Unit 2: Graph Theory	Understanding ,Apply , Analyse, Evaluate
				UNIT 3: Combinatorics	Understanding ,Apply , Analyse, Evaluate
				Unit 4: Matrices	Understanding ,Apply , Analyse, Evaluate
				Unit 5: Logic	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 6:Vector Space	Understanding ,Apply , Analyse, Evaluate
3	1 st	ENG-AE-1014 Communicative English	<ul style="list-style-type: none"> This course is designed to introduce students to aspects of effective communication, both oral and written. Various units of the paper are expected to acquaint I.T. students with 	Unit 1 : Writing	Remember, Understanding ,Apply
				Unit 2: Vocabulary	Remember, Understanding ,Apply

			various levels of communication necessary in everyday life, the emphasis throughout is on helping them acquire the basic skills- particularly the ability to write and speak plain and correct English.	Unit 3: Grammar	Remember, Understanding ,Apply
				Unit 4: Speaking	Remember, Understanding ,Apply
4	1 st	ITB-HG-1026 Office Automation	<ul style="list-style-type: none"> Upon finishing the course, students will have the ability to create documents, spreadsheets, brief presentations, and familiarize themselves with the internet. 	Unit 1: Word Processing	Remember,Apply , Analyse, Evaluate
				Unit 2: Spreadsheet	Remember, Apply , Analyse, Evaluate
				Unit 3: Presentation Tools	Remember, Apply , Analyse, Evaluate
				Unit 4: DTP Software	Remember, Apply , Analyse
				Practical	Remember, Apply , Analyse, Evaluate
5	2 nd	ITB-HC-2016	<ul style="list-style-type: none"> This subject contains a basic concept of linear and non linear data structure. Brief description 	Unit 1: Basic Concept	Understanding ,Apply , Analyse, Evaluate

		Data Structure and algorithm	<p>of static and dynamic memory allocation for example array and different types of linked lists. Various algorithms related to add and delete memories from array, linked lists, stacks, queues.</p> <ul style="list-style-type: none"> Fundamental concept of trees and graphs. Concept of time and space complexity of various searching and sorting algorithms. 	<p>Unit 2: Arrays</p>	Remember, Understanding, Apply, Analyse, Evaluate
				Unit 3: Stacks and Queues	Remember, Understanding, Apply, Analyse, Evaluate
				Unit 4: Binary Trees	Remember, Understanding, Apply, Analyse, Evaluate
				Unit 5: Sorting and Searching	Remember, Understanding, Apply, Analyse, Evaluate
				Unit 6: Analysis of Algorithm	Remember, Understanding, Apply, Analyse, Evaluate
				LABORATORY	Remember, Apply, Analyse, Evaluate
6	2 nd	ITB-HC-2026 Digital logic	<ul style="list-style-type: none"> The student will be able to, Gain knowledge between different types of number systems, and their conversions. Design various Logic gates and simplify Boolean equations. Design various Flip Flops, Shift registers and determining outputs. 	Unit 1: Boolean algebra and Logic gates	Understanding, Apply, Analyse, Evaluate
				Unit 2: Combinational circuit	Understanding, Apply, Analyse, Evaluate
				Unit 3: Sequential Circuit	Understanding, Apply, Analyse, Evaluate

			<ul style="list-style-type: none"> Study different types of counters. 	Unit 4: Counters	Understanding ,Apply , Analyse, Evaluate
				Unit 5: Resistors and the Memory Unit	Remember, Understanding
7	2 nd	ITB-HG-2016 Mathematics-II	<ul style="list-style-type: none"> To find out the roots of practical problems by studying mathematics section. This essay explains the internal correlations between a computer system's fundamental parts and their functional units, as well as the study of instruction and its format and addressing modes. Examine the various digital computer data transfer techniques. It gives a fair overview of the arrangement of hardware and micro programmed CPUs using assembly language programming, or control logic architecture. a thorough examination of address translation, DMA access control, and interruptions in system operation. 	Unit 1: Sequence and Series	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 2: Trigonometry	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 3: Abstract Algebra	Understanding ,Apply , Analyse, Evaluate
				Unit 4: Relation	Understanding ,Apply , Analyse, Evaluate
				Unit 5: Calculus	Understanding ,Apply , Analyse, Evaluate
8	3 rd	ITB-HC-3016		Unit 1: Introduction	Remember, Understanding

		Computer Organization	<ul style="list-style-type: none"> This essay explains the internal correlations between a computer system's fundamental parts and their functional units, as well as the study of instruction and its format and addressing modes. Examine the various digital computer data transfer techniques. It gives a fair overview of the arrangement of hardware and micro programmed CPUs using assembly language programming, or control logic architecture. a thorough examination of address translation, DMA access control, and interruptions in system operation. 	Unit2: Register Transfer Logic	Remember, Understanding ,Apply , Analyse
				Unit 3: Processor Logic Design	Remember, Understanding , Analyse
				Unit 4: Control Logic Design	Remember, Understanding , Analyse
				Unit 5: I/O Subsystem	Remember, Understanding , Analyse
				Unit 6: Memory subsystem	Remember, Understanding
9	3 rd	ITB-HC-3036 Operating System	<ul style="list-style-type: none"> The creation and application of operating systems is the main topic of this essay. Operating system architecture, memory management, inter process communication, process management, and device drivers are among the subjects covered. Operating system programming is one of the practical tasks. 	Unit 1: Introduction	Remember, Understanding
				Unit 2: Memory Management	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 3: Processes and Threads	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 4: Deadlocks	Remember, Understanding ,Apply , Analyse, Evaluate

				Unit 5: File System	Remember, Understanding ,Apply , Analyse, Evaluate
				Practical	Remember, Understanding ,Apply , Analyse, Evaluate
10	3 rd	ITB-HC-3036 Database Management System	<ul style="list-style-type: none"> DBMS is crucial because it effectively organizes data and makes it easy for users to accomplish a variety of operations on it. We could have had to do it by hand and it would have taken longer without DBMS. Additionally, DBMS aids in the multiform data preservation. 	Unit 1: File structure	Remember, Understanding
				Unit 2: Overview of Database Management System	Remember, Understanding
				Unit 3: Relational Models	Remember, Understanding
				Unit 4: Database Design	Remember, Understanding ,Apply , Analyse, Evaluate
				Practical	Remember, Understanding ,Apply , Analyse, Evaluate
11	3 rd	ITB-SE-3024 Programming in Python	<ul style="list-style-type: none"> The goal of a Python programming course is to equip students with the knowledge and skills needed to effectively use Python for a variety of programming tasks, from simple 	Unit 1: Planning the Computer Program	Remember, Understanding
				Unit 2: Techniques of Problem Solving	Remember, Understanding

			scripting to complex application development.	Unit 3: Overview of Programming	Remember, Understanding
				Unit 4: Introduction to Python	Remember, Understanding, Apply, Analyse, Evaluate
				Unit 5: Creating Python Programs	Remember, Understanding, Apply, Analyse, Evaluate
				Unit 6: Python File Operations	Remember, Understanding, Apply, Analyse, Evaluate
12	3 rd	ITB-HG-3016 Multimedia and Application	<ul style="list-style-type: none"> By the end of the course, students should be well-equipped to design, develop, and manage multimedia applications and projects, applying industry-standard practices and techniques to create compelling and impactful multimedia experiences. 	Unit 1: Multimedia	Remember, Understanding
				Unit 2: Text	Remember, Understanding, Analyse
				Unit 3: Images	Remember, Understanding, Analyse
				Unit 4: Sound	Remember, Understanding, Analyse
				Unit 5: Video	Remember, Understanding, Analyse

				Unit 6: Animation	Remember, Understanding, Analyse
13	4 th	ITB-HC-4016 Programming in JAVA	<ul style="list-style-type: none"> Students should be able to create complex Java applications by the end of this course. After completing the course, the student will be proficient in building sophisticated computer programs with both command-line and graphical user interfaces using the Java language. 	Unit 1: Java language basics	Remember, Understanding
				Unit 2: Java applets	Remember, Understanding, Apply, Analyse, Evaluate
				Unit 3: Networking	Remember, Understanding, Apply, Analyse, Evaluate
				Unit 4: Java Database Connectivity	Remember, Understanding, Apply, Analyse, Evaluate
14	4 th	ITB-HC-4026 Software Engineering	<ul style="list-style-type: none"> Building high-quality software products requires the application of computer science theory and knowledge, which is what software engineering, does. Software is a discipline that is developing and is becoming more and more significant in our daily lives. In every industry, there is an increasing demand for skilled software developers. As technology develops, businesses of all stripes—from banking and finance to healthcare and 	Unit 1 :Introduction	Remember, Understanding
				Unit 2 : Software Project Planning	Remember, Understanding, Analyse, Evaluate
				Unit 3: Software Design	Remember, Understanding, Analyse, Evaluate
				Unit 4 : Software Testing and Maintenance	Remember, Understanding, Apply, Analyse, Evaluate

			national security—are looking for people with the capacity to create high-quality software while taking design, development, security, and maintenance into consideration.		
15	4 th	ITB-HC-4036 Data Communication and Computer Networks	<ul style="list-style-type: none"> Examine the fundamental terms and classification of computer networking and list the levels of the OSI and TCP/IP models. Sort the routing protocols and examine the process of allocating IP addresses to the specified network. Explain the protocols and the roles that the data link layer plays. Describe the various transmission media types and their applications in real time. 	Unit 1: Introduction	Remember, Understanding
				Unit 2: Physical Layer	Remember, Understanding , Analyse, Evaluate
				Unit 3: Data Link Layer	Remember, Understanding , Analyse, Evaluate
				Unit 4: Network Layer	Remember, Understanding , Analyse, Evaluate
				Unit 5: Transport Layer	Remember, Understanding , Analyse, Evaluate
				Unit 6: Application Layer	Remember, Understanding , Analyse, Evaluate
16	4 th	ITB-SE-4014 Android Programming	<ul style="list-style-type: none"> By the end of the course, students should be capable of designing, developing, testing, and deploying functional Android applications, either 	Unit 1: Introduction	Remember, Understanding
				Unit 2: Get started with Android	Remember, Understanding ,Apply

			independently or as part of a team, ready for distribution on the Google Play Store.	Unit 3: Activities	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 4: Designing User Interface	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 5: Background Task and Local File Storage	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 6: Database	Remember, Understanding ,Apply , Analyse, Evaluate
17	4 th	ITB-HG-4026 Information Security and Cyber Laws	<ul style="list-style-type: none"> Students will have a fundamental understanding of security, cryptography, system assaults, and countermeasures after completing the course. 	Unit 1: Introduction	Remember, Understanding
				Unit 2: Digital Crime	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 3: Information Gathering Techniques	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 4: Risk Analysis and Threat	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 5: Introduction to Cryptography and Applications	Remember, Understanding ,Apply , Analyse, Evaluate

				Unit 6: Safety Tools and Issues	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 7: Cyber laws to be covered as per IT 2008	Remember, Understanding ,Apply , Analyse
18	5 th	ITB-HC-5016 Compiler Design	<ul style="list-style-type: none"> Programming languages are more important for computer science. It gives the knowledge about various programming language. But Compiler provides the theoretical and practical knowledge that is needed to implement a programming language. 	Unit 1: Introduction	Remember, Understanding
				Unit 2: Lexical Analysis	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 3: Syntax analysis	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 4:Code generation	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 5:Code Optimization	Remember, Understanding ,Apply , Analyse, Evaluate
19	5 th	ITB-HC-5026 Web Technology	<ul style="list-style-type: none"> Concepts of webpage and websites. Client and server side scripting language. Basic HTML and XHTML for designing. Description about web server architecture and working. It also helps to design webpage and small websites. 	Unit 1: Internet Basics	Remember, Understanding
				Unit 2: Client Server Model	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 4: Web Object Model	Remember, Understanding ,Apply , Analyse, Evaluate

				Unit 5: XML	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 6: Distributed Multitiered Application	Remember, Understanding ,Apply , Analyse, Evaluate
20	5 th	ITB-HE-5016 E-commerce	<ul style="list-style-type: none"> By the end of the course, students should be equipped with the knowledge, skills, and tools necessary to plan, launch, manage, and grow successful e-commerce businesses in a competitive online marketplace. 	Unit 1: An introduction to Electronic commerce	Remember, Understanding
				Unit 2: The Internet and WWW	Remember, Understanding
				Unit 3: Internet Security	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 4: Electronic Data Exchange	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 5: Planning for Electronic Commerce	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 6: Internet Marketing	Remember, Understanding ,Apply , Analyse, Evaluate
21	5 th	ITB-HE-5046 Project Work / Dissertation	<ul style="list-style-type: none"> The outcome of the project is to train the students to independently search, identify and study real life important topics in CS/IT to developed 		

			skills among students in particular field of CS/IT and to expose students to the world of technology, innovation and research.		
22	6 th	ITB-HC-6016 System Administration using Linux	<ul style="list-style-type: none"> Make appropriate decisions during the configuration process to create a properly functioning Linux environment. Use programs and utilities to administer a Linux machine. Explain how a Linux server can be integrated within a multi platform environment. Analyze the need for security measures for a Linux environment 	Unit 1	Remember, Understanding
				Unit 2	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 3	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 4	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 5	Remember, Understanding ,Apply , Analyse, Evaluate
23	6 th	ITB-HC-6026 Computer Graphics	<ul style="list-style-type: none"> To list the basic concepts & components used in computer graphics. To implement various algorithms to scan, convert the basic geometrical primitives, transformations, Area filling, clipping. To describe the importance of viewing and projections. To design an 	Unit 1: Introduction	Remember, Understanding
				Unit 2: Output primitives	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 3: Geometric Transformations	Remember, Understanding ,Apply , Analyse, Evaluate

			application with the principles of virtual reality. Provide an understanding of how to scan convert the basic geometrical primitives, how to transform the shapes to fit them as per the picture definition	Unit 4: 3D geometric transformations	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 5: Visible surface detection & rendering	Remember, Understanding ,Apply , Analyse, Evaluate
24	6 th	ITB-HE-6016 Microprocessor	<p>This paper gives</p> <ul style="list-style-type: none"> • Differentiate various types of computers and processors. • Knowledge regarding the inner blocks of processor and their specific functions • Knowledge in types of instructions and their usages. • Write different program using instructions of 8085 microprocessor • Differentiate various interrupts with their priorities. 	Unit 1: Internal Organization of 8085A microprocessor	Remember, Understanding , Analyse
				Unit 2: 8085A microprocessor architecture	Remember, Understanding , Analyse
				Unit 3: Assembly language programming in 8085A microprocessor	Remember, Understanding , Analyse
				Unit 4: Interfacing	Remember, Understanding , Analyse
				Unit 5: Interrupts	Remember, Understanding , Analyse
25	6 th	ITB-HE-6026	<ul style="list-style-type: none"> • By the end of the course, students should be equipped with 	Unit 1: Data Warehousing	Remember, Understanding , Analyse

		Data Mining and Warehousing	the knowledge, skills, and tools necessary to analyze large datasets, extract valuable insights, and design and implement data warehousing solutions to support decision-making and business intelligence requirements in organizations.	Unit 2: Data Mining	Remember, Understanding , Analyse
				Unit 2.1: Introduction	Remember, Understanding , Analyse
				Unit 2.2: Clustering	Remember, Understanding , Analyse
				Unit 2.3: RuleMining	Remember, Understanding , Analyse
				Unit 2.4: Decision Trees	Remember, Understanding , Analyse
				Unit 2.5: AdvancedTopics	Remember, Understanding , Analyse

18. Bachelor of Computer Application (BCA)

SL. NO.	YEAR	PAPER CODE & TITLE	COURSE OUTCOMES	UNIT/ CHAPTER	BLOOM'S TAXONOMY LEVEL
1	1 st	TCA-RC-1016 Fundamentals of Computer Applications	<ul style="list-style-type: none"> • Student will able to learn about basics of computer system, which includes both the concept of computer hardware and software. • Student will able to learn about what is programming language, how to design an algorithm to solve a particular problem • Student will able to learn basics of operating system. • Student will learn about computer network and computer security. 	Unit 1: Major components of a computer	Remembering, Understanding
				Unit 2: Algorithms	Remembering, Understanding, Analysing, Application
				Unit 3: Operating System	Understanding, Analysing
				Unit 4: Data communication	Understanding, Analysing
				Unit 5: Internet	Understanding, Analysing
				Unit 6: Computer Security	Remembering, Understanding, Analysing
2	2 nd	TCA-RC-2016 Introduction to Programming in C	<ul style="list-style-type: none"> • Student will able to learn about C programming language. • Student will able to learn computer language translator. 	Unit 1: Introduction to C	Remembering, Understanding, Analysing, Application
				Unit 2: Arrays and pointers	Remembering, Understanding, Analysing,

			<ul style="list-style-type: none"> Practical knowledge about programming. 		Application
				Unit 3: Structures and Files	Remembering, Understanding, Analysing, Application
3	3 rd	TCA-RC-3016 Operating Systems	<ul style="list-style-type: none"> To give students the role of operating system in computer. To provide students the concept of process management To familiarize students with the concept of real time OS. To provide the practical concept of OS. 	Unit 1: Introduction	Remembering, Understanding
				Unit 2: Types of operating systems	Remembering, Understanding
				Unit 3: Operating System Organization	Remembering, Understanding, Analysing
				Unit 4: Process Management	Remembering, Understanding, Analysing, Application
				Unit 5: Scheduling	Remembering, Understanding, Analysing, Application
				Unit 6: Memory Management	Remembering, Understanding, Analysing, Application
4	4 th	TCA-RC-4016 Introduction to Database	<ul style="list-style-type: none"> Learn database concepts and its architectural components. 	Unit 1: Introduction to Database Management Systems	Remembering, Understanding

		Management System	<ul style="list-style-type: none"> • Describe different data models used for designing a database. • To create a database using relational models and entity relationships concepts • Normalize a database into various normal forms • Design SQL queries to handle a relational database. 	Unit 2: Entity Relationship and Enhanced ER Modeling	Remembering, Understanding, Analysing, Application
				Unit 3: Relational Data Model	Remembering, Understanding, Analysing, Application
				Unit 4: Database Design	Remembering, Understanding, Analysing, Application
5	5 th	TCA-RE-5016 Project Work/Dissertation	<ul style="list-style-type: none"> • Apply fundamental and disciplinary concepts and methods in ways appropriate to their principal areas of study. • Demonstrate skill and knowledge of current information and techniques specific to the professional field of study. • Integrate information from multiple sources. • Software Development and Research Ability 		Application, Evaluating

6	6 th	TCA-RE-6026 Computer Networks	<ul style="list-style-type: none"> • To familiarize students with the concept of Computer Networking. • To familiarize the different model of Computer Network. • To learn about network protocols. • To provide the practical concept of Networking. 	Unit 1: Basic concepts	Remembering, Understanding,
				Unit 2: Physical Layer	Remembering, Understanding
				Unit 3: Data Link Layer	Remembering, Understanding, Analysing
				Unit 4: Network Layer	Remembering, Understanding, Analysing
				Unit 5: Transport Layer	Remembering, Understanding, Analysing
				Unit 6: Application Layer	Remembering, Understanding, Analysing
				Unit 7: Network Security	Remembering, Understanding, Analysing, Application

19. Bachelor of Physical Education & Sports (BPES)

SL. NO.	YEAR	PAPER CODE & TITLE	COURSE OUTCOMES	UNIT/ CHAPTER	BLOOM'S TAXONOMY LEVEL
1	1 st	BPES101 English	Enhance the power of vocabulary which is attained only by the knowledge of synonyms , verbs , proverb etc .Correct the grammatical mistake with the knowledge of tenses and voice includes the abilities of writing i.e. : correspondence, application resume, essay writing etc. They will also have an exposure on English literature with the help of Indian and world section contemporary writers book like Malgudi days and Silasmarners.	Unit 1 : Vocabulary	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2 : Grammar	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3 :Correspondence	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4 :Descriptive writing	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5 : Texts prescribed	Remember, Understand, Apply, Analyse, Evaluate
2	1 st	BPES102 Sociology & Environmental Science	From unit 1 and & 2 student will know the proper consideration the themes seated to overview on sociology (meaning, scope & methods). Considers the Indian rural social trends in rural change. The paper considers the themes on basic concept of environmental, human health & environmental family welfare. It provides the scope for the student a specifically learning how to control or find out th controlling	SECTION – A SOCIOLOGY	Remember, Understand, Apply, Analyse, Evaluate
				Unit 1: Introduction to Sociology. Meaning, definition, Scope etc.	

			measures of environmental pollution a natural disaster and this management.	SECTION – B ENVIRONMENTAL STUDIES Unit 3 : Introduction to EVS Definition ,Scope& importance etc.	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Natural Resource and its related issue etc	Remember, Understand, Apply, Analyse, Evaluate
3	1 st	BPES103 GeneralScience	Physics:- helps students understand the mechanics of movement, optimize performance, and understand safety awareness. It helps design effective training programs, improve technique, and prevent injuries. Students can analyze factors like projectile motion and aerodynamics to optimize sports performance. Physics also helps design equipment, understanding factors like friction and buoyancy in running shoes and swimming. Chemistry:- The unit focuses on chemistry, allowing students to understand the basic structures, behaviours, and properties of elements, molecules, and chemical composition. It covers chemical law and theories, highlighting important processes in daily life, and biochemistry, focusing on key compounds and life processes.	Unit 1: Physics	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Chemistry	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Biology	Remember, Understand, Apply, Analyse, Evaluate

			<p>Biology:- is a crucial biological foundation for physical education professionals, enabling the design of safe exercise programs, improved athletic performance, and overall health. Students learn about the musculoskeletal system, cardiovascular and respiratory systems, and energy systems, which help in injury prevention, training methods, and optimizing performance for various sports and fitness goals.</p>		
4	1 st	BPES104 History and Elements of Physical Education	<p>This paper is the base of physical education as it provides with the knowledge of ancient times from where physical education has evolved. It gives the difference between education and physical education and its relation. It gives the historical development of physical education in India during different periods from ancient to modern India, also foreign countries like USSR, GREECE, ROME EGYPT etc. and the contribution of YMCA and its origins', and the knowledge about the games like ANCIENT OLYMPIC, MODERN OLYMPIC, ASIAN GAMES ETC</p>	<p>Unit 1 : Introduction to education & Physical Education, Meaning, Definition, Scope, Aim & Objectives etc.</p>	Remember, Understand, Apply, Analyse, Evaluate
				<p>Unit 2: Components of Physical Education Activities & branches of Physical education</p>	Remember, Understand, Apply, Analyse, Evaluate
				<p>Unit 3: Historical Development of Physical Education in Asia & other parts of the Globe</p>	Remember, Understand, Apply, Analyse, Evaluate
				<p>Unit 4: Historical Development of Physical Education in India, from Vedic time to Post</p>	Remember, Understand, Apply, Analyse, Evaluate

				independence era	
				Unit 5 : Olympic movement : Ancient & Modern times, Commonwealth games, Asian games etc.	Remember, Understand, Apply, Analyse, Evaluate
5	1 st	BPES105 Anatomy And Physiology	The course aims to provide a comprehensive understanding of human anatomy and physiology relevant to physical education. Students learn to identify and describe anatomical structures, understand physiological processes underlying movement and exercise, and apply this knowledge to promote safe and effective physical activity. Emphasis is placed on injury prevention, performance enhancement, and health promotion through exercise. By mastering these outcomes, students are equipped to design tailored exercise programs, provide basic first aid, and support individuals in achieving their fitness goals. This foundational knowledge enhances their ability to excel as physical educators, coaches, or fitness professionals	Unit 1 : Introduction to Anatomy & Physiology .Meaning ,Definition , Uses of it. Cell ,Tissue, Organs &its structure	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2 : Skeletal system ,Muscular system, in details.	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Respiratory system, Digestive System ,in details.	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4 : Excretory system, Endocrine system & Reproductive system, in details.	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Nervous System & Sensory System, in details.	Remember, Understand, Apply, Analyse, Evaluate
			It aims to equip students with	Unit 1: Computer	Remember, Understand,

6	1 st	BPES106 Basic Computer Science and Information Technology	fundamental knowledge and skills in utilizing computer science and information technology within the context of physical education. This includes understanding basic concepts of computer science relevant to the field, such as software applications for fitness tracking, biomechanical analysis, and sports performance evaluation. Students learn to integrate technology effectively to enhance teaching methodologies, training programs, and performance assessment in physical education settings. By the end of the course, students should be proficient in utilizing various software tools and applications to analyze sports data, design training programs, and promote healthy lifestyles. Additionally, they should be able to critically evaluate the role of technology in advancing physical education practices and advocating for its integration in professional settings.	fundamentals	Apply, Analyse, Evaluate
				Unit 2: Word precessing –Ms word	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: MS Power Point	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: MS Excel	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: MS Access	Remember, Understand, Apply, Analyse, Evaluate
				Unit 6: Internet	Remember, Understand, Apply, Analyse, Evaluate
7	2 nd	BPES201 Health Education Corrective & Rehabilitation	This Paper is provides the knowledge of hygiene and proper care of health, uses and scope of health education and where we can implement them. It gives knowledge or enlighten the individual's prospective towards personal hygiene which protects from disease. It also provides the knowledge about how to prevent from poll. on another unit	Unit 1: Concept of Health ,Meaning ,Definition ,Aim ,Objective ,Dimensions, Scope & Princpal of Health Education.	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Personal Hygiene & Mental Health etc	Remember, Understand, Apply, Analyse, Evaluate

			provides the knowledge of how to correct postural deformities and their Remedial exercise and its techniques and method	Unit 3 : Community Health & Community Health Programme etc	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Corrective Physical Education .Meaning ,Scope & Objective. etc	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Rehabilitation, Meaning Scope & Objective Etc	Remember, Understand, Apply, Analyse, Evaluate
8	2 nd	BPES202 PhysiologyOf Exercise	The course aims to provide students with a comprehensive understanding of exercise physiology within the context of physical education. Students learn the physiological responses and adaptations of the human body to various forms of exercise, including cardiovascular, respiratory, muscular, and metabolic systems. Emphasis is placed on the principles of training, exercise prescription, and performance optimization. Through theoretical knowledge and practical applications, students develop skills in designing exercise programs tailored to individual needs, enhancing athletic performance,	Unit 1: Concept of Physiology of Exercise, Meaning & definition.,Energy	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Skeletal Muscle ,its Microscopic structure ,Muscle Contraction Theory & Effect of Exercise on it	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Cardiac System ,Hearth, Respiration process & effect its Exercise on it	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Endocrine System , & effect its Exercise on it.	Remember, Understand, Apply, Analyse,

			and promoting overall health and fitness. Mastery of these outcomes equips students to apply evidence-based approaches in exercise science, coaching, and physical education settings, facilitating optimal performance and well-being	Heat Balance ,Nutrition ,Temperature Regulation	Evaluate
				Unit 5: Body Composition ,HearthRate monitor During Exercise	Remember, Understand, Apply, Analyse, Evaluate
9	2 nd	B PES203 Methods InPhysical Education	The course focuses on equipping students with essential methods and strategies for effective teaching and learning in physical education. Students learn various instructional techniques, curriculum development, and assessment methods tailored to diverse learners and educational contexts Emphasis is placed on fostering student engagement skill development, and lifelong physical activity participation. Through theoretical insights and practical applications, students gain proficiency in designing and implementing age-appropriate physical education programs, promoting inclusive learning environments, and utilizing technology fo enhanced teaching. Mastery of these outcomes enables students to excel as competent and confidenphysical education educators, positively impacting the lives of individuals through quality	Unit 1: Meaning & Principle ofTeaching. Various Teaching Methods	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Lesson Planning ,Its type. Meaning , Definition Objective & Value. Principle & Importance of Lesson Plan.	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3 : Presentation Technique, Its types .Commands and its Types	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Teaching Aid : Meaning Definition , importance & Classification of it	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Tournament :Meaning Importance &	Remember, Understand, Apply, Analyse,

			physicaleducation instruction	Types of it .Fixture making	Evaluate
10	2 nd	BPES204 RecreationAnd Yoga	The course aims to provide students in Physical Education program with a comprehensive understanding of recreation and yoga principles. Students explore various recreational activities and yoga practices, focusing on their physical, mental, and social benefits. Emphasis is placed on experiential learning, skill development, and personal well-being enhancement. Through theoretic knowledge and practical application, students learn to design and facilitate recreational programs and yoga sessions that cater to diverse populations and promote holistic health. Mastery of these outcomes equips students to effectively engage individuals in leisure pursuits, enhance quality of life, and contribute to the promotion of wellness and active living in communities.	Unit 1: Introduction ,Meaning Definition, Scope ,Importance, Misconception & Characteristics of Recreation.	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Influence of Recreation on Social Institution	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Planning for Recreation Programme for it	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Camping : Survey & its organisation process	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Yoga :Meaning ,Definition &Historical Background ,Eight Limbs of Yoga	Remember, Understand, Apply, Analyse, Evaluate
11	2 nd	BPES205 Management In Physical Education & Sports	The course aims to equip students in the Bachelor oPhysical Education program with essential management skills and knowledge relevant to the field of physical education and sports. Students	Unit 1: Management , Administration & Organisation its Meaning ,Definition & Principles of it	Remember, Understand, Apply, Analyse, Evaluate

			learn principles of organizational management, leadership administration in educational and sports settings. Emphasis is placed on strategic planning, budgeting facility management, event coordination, and risk management. enables students to successfully manage sports programs, events, and facilities, ensuring efficient operations and fostering a culture of excellence in physical education and sports management. Its also provides the knowledge about how to maintain equipment and care them, knowledge of preparing fixture and how & where to construct and maintained the facilities like gymnasium, swimming pool, and also enlightens with the event like intramural & extramural.	Unit 2: Sports Facilities :Indoor – Outdoor & its managements	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3 : Time Table, Factors effecting on it, Leaders :Its Meaning Definition	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Extramural & Intramural	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Supervision ,Class Management, office Management, & Budgeting	Remember, Understand, Apply, Analyse, Evaluate
12	3 rd	FPES Foundation of Physical Education and Sports	On that paper student will have some fundamental foundational knowledge from various aspects of physical education. Here they will know about sociology, biology, psychology, anatomical & physiological subject put a ray on interrelation between above subjects with sports and implication of above listed subject in the field of physical education and spots.	Unit 1: Philosophical & Sociological Foundation	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Biological Foundation	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Psychological Foundation	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Anatomical & Physiological Foundation	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Bio Mechanical	Remember, Understand,

				Foundation	Apply, Analyse, Evaluate
13	3 rd	KIBI Kinesiology And Biomechanics	paper consist with five unit ,there first three unit is deal with kinesiology. Here student will know about meaning, aim , importance and historical details of kinesiology and anatomy as well as body joints , movement and related Terminologies with them. Also in third and fourth unit student will have idea about biomechanics, national and equilibrium. As well as they will have knowledge and terminologies like liver ,force , friction, locomotion and it is relate with sports performance.	Unit 1: kinesiology ,Its Meaning & Importance on Sports	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Anatomical Foundation & Types of Muscle Contraction	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Body Joints & its Characteristics , its Movements	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Biomechanics ,Motions & Equilibriums & its Meaning Importance	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Liver ,Force ,Frictions, Locomotion : its Definition ,Term & uses applications	Remember, Understand, Apply, Analyse, Evaluate
14	3 rd	EDSP Education and Sports Psychology	It this paper student will know about psychology specifically sport psychology under five different unit. In Unit 1st student will learn about meaning, definition, scope, importance and methods of psychology and sports psychology. In Second and third unit student will gain knowledge about developmental psychology, Here growth	Unit 1: Psychology & Sports Psychology Meaning ,Definition & Scope of it	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Growth & Development ,Heredity & Environment ,Motivation	Remember, Understand, Apply, Analyse, Evaluate

			& development history and environmental, motivational learning theories are discussed where various factors related with personality are viewed. On fifth unit counselling and guideline method are included, where students are getting grumps of counsellor task ,their qualities etc.	Unit 3: Learning :Principles ,Low of Learning & Theories of it	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Personality & its Traits, Emotions	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Counselling & Guidance	Remember, Understand, Apply, Analyse, Evaluate
15	3 rd	TMPE Test and Measurement in Physical Education	Test and measurement are some important element in physical education. In this paper in a first unit student will learn the meaning definition, history etc. On Second unit student will going to know how to select a test and classification of test. On third and fourth unit the help of statistics. On fifth unit student will learn how to conduct fitness as well as sports test.	Unit 1:	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2:	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3:	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4:	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5:	Remember, Understand, Apply, Analyse, Evaluate
16	3 rd	OFCO Officiating And Coaching	On Unit one student will get knowledge what is officiating, duties and qualities of official, and how to improve standards of officials. On second unit	Unit 1: Test, Measurement & Evaluation: Meaning, Definition, Importance	Remember, Understand, Apply, Analyse, Evaluate

			students will know about training and coaching. On fourth and fifth unit they will know the history and present status of games and sports, where they also get the knowledge about various sports event. On fifth unit they will know about warming up and cool down ,it's meaning and effect on sports performance.	,History. Statistics	
				Unit 2: Criteria Of selection & Construction of a Test , Classification of Test	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Measurement of Central Tendencies –Mean , Median & Mode	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4: Correlation ,sampling	Remember, Understand, Apply, Analyse, Evaluate
				Unit 5: Body Fitness Tests & Sports Skills Test	Remember, Understand, Apply, Analyse, Evaluate
17	3 rd	FOST Fundamentals Of Sports Training	On the first unit student will know basic of sport training, aim characteristics principal and another unit they will know about load and recovery, factor effecting it, methods of sports training aim and its content, endurance factors determining endurance and last unit student will know the technique, tactics, skills and strategies of sport training.	Unit 1: Officiating : Meaning, Duties & Qualities	Remember, Understand, Apply, Analyse, Evaluate
				Unit 2: Coaching :Meaning ,Definition , Aim, Objective & Duties ,Qualities	Remember, Understand, Apply, Analyse, Evaluate
				Unit 3: Training & Conditioning: Its Principle, Methods	Remember, Understand, Apply, Analyse, Evaluate
				Unit 4 : History of Various	Remember, Understand,

				Games & Sports	Apply, Analyse, Evaluate
				Unit 5: Warming up & Cooling down, Sports Coaching Lesson etc.	Remember, Understand, Apply, Analyse, Evaluate

20. MA Assamese (PG)

SL.NO.	SEMESTER	PAPER CODE & TITLE	COURSE OUTCOMES	UNIT/ CHAPTER	BLOOM'S TAXONOMY LEVEL
1	1 st	ASM 1016 Rise and Development of the Assamese Language	<ul style="list-style-type: none"> Reconstruct the social history of Assam in the light of the rise of Assamese language. Justify the relationship between tradition of religion and formation of Assamese language. Compare and contrast the social history of early Assamese form of language with that of the Modern Assamese language. 	Unit 1: Emergence of regional languages in India, spoken words versus literary language, language and religion, polity and language: Inscriptions, Charyapada	Knowledge, Understand, Cognitive
				Unit 2: Assamese as a literary language; royal patronage and reproduction of epics in Assamese; early Assamese texts: Hem Saraswati's Prahrad Charit and Madhav Kandali's Ramayana	Knowledge, Understand, Cognitive
				Unit 3: Cultural and linguistic encounters: Emergence of Brajabali; emergence of Assamese prose, Buranjis and Charit Puthis	Knowledge, Understand, Cognitive
				Unit 4: Colonialism and Modern Assamese: Shaping of Modern Assamese language, the roles of Missionaries and Assamese intellectuals, print media and the language; standardization of the language.	Knowledge, Understand, Cognitive, Analyse

2	1 st	<p>ASM 1026</p> <p>History of Assamese Literature: 1889-2015</p>	<ul style="list-style-type: none"> Trace the phases of Romantic and Modern Assamese literature. 	<p>Unit 1: Salient features of Mafizuddin Ahmad Hazarika's poetry</p> <p>Salient features of Bhabananda Datta's criticism of poetry</p> <p>Salient features of Bhaben Barua's poetry</p> <p>Salient features of Jnan Pujari's poetry</p>	<p>Knowledge, Understand, Cognitive, Analyse</p>
				<p>Unit 2: Salient features of Nakul Chandra Bhuyan's plays</p> <p>Salient features of Atul Chandra Hazarika's plays</p> <p>Salient features of Himendra Barthakur's plays</p>	<p>Knowledge, Understand, Cognitive, Analyse</p>
				<p>Unit 3: Salient features of Dandinath Kalita's novels</p> <p>Salient features of Umakanta Sarma's novels</p> <p>Salient features of Yeshe Dorje Thongchi's novels</p> <p>Salient features of Arupa Patangia Kalita's novels</p>	<p>Knowledge, Understand, Cognitive, Analyse</p>

				<p>Unit 4: Salient features of Rama Dash's short stories</p> <p>Salient features of Birendra Kumar Bhattacharyya's short stories</p> <p>Salient features of Silabhadra's short stories</p> <p>Salient features of Bipul Khataniar's short stories</p>	<p>Knowledge, Understand, Cognitive</p>
3	1 st	<p>ASM 1036</p> <p>Study of Culture of Assam</p>	<ul style="list-style-type: none"> Reconstruct religious belief of the people of Ancient Assam and compare it with that of the rest of ancient India. 	<p>Unit 1: Definition, classification and scope of culture with special reference to the culture of Assam</p>	<p>Knowledge, Understand, Cognitive</p>
				<p>Unit 2: Culture of Assam in the early period (from the pre-historical times to the tenth century CE) People of Assam and their ethnic groups, architecture, sculpture, inscription, religion (magicoreligious beliefs, Kairataja dharmamat) and tradition</p>	<p>Knowledge, Understand, Cognitive, Analyse</p>
				<p>Unit 3: Culture of Assam in the medieval period (from the eleventh century CE to the eighteenth century CE) History of religions of medieval Assam Religious institutions: Temple, monastery, sattrā, namghar, mosque, pir-dargah Art, artefacts, architecture and music.</p>	<p>Knowledge, Understand, Cognitive, Analyse</p>

				Unit 4: Culture of Assam in the modern period (from the nineteenth century CE till the present time) Socio-cultural institution and organization, cultural assimilation, acculturation, deSanskritization, trans-culturalization, preservation of cultural item, and globalization.	Knowledge, Understand, Cognitive, Analyse
4	1 st	ASM 1046 History of Sanskrit Literature: History, Features and Genres	<ul style="list-style-type: none"> Trace the history and heritage of Indian literary tradition. Describe the features of Sanskrit Literature which is considered as the mother of all regional Literature including Assamese. Grasp the Indianness in Indian Literature. 	Unit 1: Poetry: Mahakavya and Khandakavya	Knowledge, Understand
				Unit 2: Drama and Campu: Theories of origin, features, types and chronological history	Knowledge, Understand, Cognitive, Analyse
				Unit 3: Prose: Features, genres and introduction to prose works.	Knowledge, Understand
				Unit 4: Sanskrit writing in Assam: Pre-Sankaradeva, Sankaradeva and Post-Sankaradeva periods: Chronological history and features.	Knowledge, Understand, Analyse
5	1 st	ASM 1054 Creative Writing	<ul style="list-style-type: none"> Compare and contrast the genres of creative writing on the basis of imitation and imagination. 	Unit 1: Imitation Imagination Anatomical components of poetry, drama and fiction.	Knowledge, Understand, Analyse

			<ul style="list-style-type: none"> • Create a piece of literature and justify its quality. • Describe the experience of reading a piece of literature. 	Unit 2: Trends in poetry, drama and fiction Language of modern poetry and modern novel.	Knowledge, Understand, Cognitive
				Unit 3: Performance (Traditional and experimental) Functional writing	Knowledge, Understand, Cognitive, Creativity
				Unit 4: Project	Knowledge, Understand, Cognitive, Analyse
6	2 nd	ASM 2016 Assamese Poetry: 1889-2015	<ul style="list-style-type: none"> • Categorise Assamese poetry (1889-2015) in groups of Romantic and Modern Phases. • Describe experience of reading Romantic and Modern Assamese Poetry. • Tell the difference between Romantic and Modern Poetry2.Plan to develop intellectual history of Assam with the help of knowledge of stone inscriptions and copperplates. • Enumerate the institutions and describe their role in preserving Assamese culture. 	Unit 1: Romantic Poetry (First Wave): Chandra Kumar Agarwala: ‘Ajeya’ (from Sanchayan, ed. Maheswar Neog) Hem Chandra Goswami: ‘Puwa’ (from the aforementioned anthology) Lakshminath Bezboroa: ‘Malati’ (from the aforementioned anthology)	Knowledge, Understand,
				Unit 2: Romantic Poetry (Second Wave): Raghunath Chaudhury: ‘Giri Mallika’ (from the aforementioned anthology) Ambikagiri Raychoudhury: ‘Mor	Knowledge, Understand, Cognitive

				<p>Bina' (from the aforementioned anthology)</p> <p>Devakanta Barua: 'Aprakarsh' (from the aforementioned anthology)</p>	
				<p>Unit 3: Modern Poetry (First Wave):</p> <p>Hem Barua: 'Poharatkoi Endhar Bhal' (from Sanchayan, ed. Maheswar Neog)</p> <p>Navakanta Barua: 'Samratar Para' (from Sanchayan, ed. Maheswar Neog)</p> <p>Ajit Barua: 'Dukhar Kabita' (from Sanchayan, ed. Maheswar Neog)</p> <p>Nilmoni Phookan: 'Olami Thaka Golapi Jamur Lagna' (from Sanchayan, ed. Maheswar Neog)</p>	<p>Knowledge, Understand, Cognitive</p>
				<p>Unit 4: Modern Poetry (Second Wave):</p> <p>Hirendra Nath Dutta: 'Chhayamoya' (from Sanchayan, ed. Maheswar Neog)</p> <p>Anis Uz Zaman: 'Ai Tor Andharar Hatkhan Bhangi Dilon' (from Tarun Prajanmar Kabita, ed. Harekrishna Deka)</p>	<p>Knowledge, Understand, Cognitive, Analyse</p>

				<p>Sameer Tanti: ‘Mor Pratito Din aru Ratir Arombhani’ (from the aforementioned anthology)</p> <p>Anubhav Tulasi: ‘Cihnajatnar Keitiman Jalamagna Drisya’ (from the aforementioned anthology)</p> <p>Nilim Kumar: ‘Guwahati’ (from the aforementioned anthology)</p>	
7	2 nd	<p>ASM-2026</p> <p>Assamese Prose: 1846-2015</p>	<ul style="list-style-type: none"> • Trace the development of Assamese prose from 1846 to 2015. • Interpret the changes occurring in Assamese prose. • State the present features of Assamese prose. 	<p>Unit 1: Anandaram Dhekial Phukan: ‘Asam Deshar Sangkhep Katha’ (from Arunodoi, ed. Maheswar Neog)</p> <p>Nidhi Lebi Farwel: ‘Bidya aru Gyan Labhar Phal Ki’ (from Arunodoi (1855-1865), ed. Arupjyoti Saikia)</p> <p>Ratneswar Mahanta: ‘Manobritti’ (from Ratneswar Mahanta Rasanawali: ed. Jogendranarayan Bhuyan)</p>	<p>Knowledge , Understand</p>
				<p>Unit 2: Lakshminath Bezbaroa: Mor Jivan Sowaran (Chapters I and II)</p> <p>Satyanath Bora: ‘Bor Lokar Charitra Adhyayan’ (from Srestha Asamiya Nirbachita Prabandha, Part I: ed. Homen Borgohain)</p> <p>Kaliram Medhi: ‘Sankardev aru</p>	<p>Knowledge, Understand, Cognitive</p>

				Chaitanyadev' (from the aforementioned anthology)	
				Unit 3: Banikanta Kakati: 'Soundarjyar Pratarana' (from Sahitya aru Prem) Krishna Kanta Handique: 'Biswa Sahityar Patabhumit Asamiya Sahitya' (from Krishnakanta Handique Sahitya Sambhar: ed. Jatindranath Goswami) Trailokyanath Goswami: 'Prachin Aru Adhunik Sahitya' (from Sahitya Alochana)	Knowledge, Understands
				Unit 4: Atul Chandra Baruah: 'Samaj, Krisi aru Gaonor Itibritta' (from Atul Chandra Boruah Rachanawali (Part II): ed. Kanak Chandra Deka) Hiren Gohain: 'Mahan Oupanyasik Birinchi Kumar Barua' (from Hiren Gohain Rachanawali, Pratham Khanda: ed. Sonit Bijay Das and Munin Bayan) Homen Borgohain: 'Asamiya Chutigalpa (1940-1970)' (from Asamiya Galpa Sankalan, Vol II, ed. Homen Borgohain)	Knowledge, Understand

8	2 nd	<p style="text-align: center;">ASM 2036</p> <p style="text-align: center;">Assamese Drama and Performance: 1857- 2015</p>	<ul style="list-style-type: none"> • Reconstruct the history of Assamese drama and performance since 1857. • Describe the experience of viewing a play 3. Enumerate the trends of Assamese Drama since 1857. 	<p>Unit 1: Trends in Assamese Drama: 1857-2015 With special emphasis on amateur theatre, mobile theatre and radio plays</p>	Understand, Analyse	
<p>Unit 2: Rudraram Bordoloi: Bangal Bangalani, ed. Jyotirmoy Jana</p> <p>Padmanath Gohain Barua: Gaonburha (from Gohain Barua Rachanavali, ed. Maheswar Neog)</p> <p>Lakshminath Bezbaroa: Chakradhwaj Sinha (from Bezbaroa Granthavali, Vol. II, ed. Atul Chandra Hazarika</p> <p>Jyotiprasad Agarwala: Karengar Ligiri (from Jyotiprasad Rachanavali, ed. Satyendra Nath Sarma)</p>						Knowledge, Understand
<p>Unit 3: Mahendra Borthakur: Saraguri Chapori</p> <p>Arun Sarma: Sri Nibaran Bhattacharyya (from Arun Sarma Nirbachito Natak)</p> <p>Karuna Deka: Luitkanya (from Adhunik Asamiya Natya Sambhar, ed. Jagadish Patgiri)</p>						Knowledge, Understand, Analyse

				<p>Unit 4: Proscenium Theatre in Assam</p> <p>Brechtian influence on Assamese Theatre</p> <p>Recent experimental theatres of Assam</p>	<p>Knowledge, Understand, Analyse</p>
9	2 nd	<p>ASM 2046</p> <p>Indian Criticism</p>	<ul style="list-style-type: none"> • Describe the Indian systems of evaluating Literature. • Trace the thought systems of ancient Indian Literary critics. • Interpret Literature from Indian point of view. 	<p>Unit 1: Sabdashakti (Words and meaning; power of word)</p> <p>Dhvani: Concept, evolution and application</p> <p>Vakrokti: Concept and application</p>	<p>Knowledge, Understand</p>
				<p>Unit 2: Rasa: Concept, evolution and application</p> <p>Guna and Riti: Concept and application</p>	<p>Knowledge, Understand, Analyse, Cognitive</p>
				<p>Unit 3: Bhaktivadi rhetoricians of medieval India</p>	<p>Knowledge, Understand</p>
				<p>Unit 4: Nativism</p> <p>Western native, Indian features, origin and development</p>	<p>Knowledge, Understand, Analyse, Evaluate</p>

10	2 nd	ASM 2054 Editing	<ul style="list-style-type: none"> Trace the phases of book history in India. Critique a manuscript. Tell the philosophy behind the book-editing 	Unit 1: The philosophy and objectives of book-editing General book editing Book history in India and Assam The genesis of book editing	Knowledge , Understand
				Unit 2: Acquisition and evaluation of manuscripts	Knowledge, Understand, Analyse, Evaluate
				Unit 3: Copy-editing Book making Style Proof Production and printing	Knowledge, Understand, Analyse, Creativity
				Unit 4: Relationship between editorial and other departments of publishing	Knowledge about Editing, Understand, Analyse
11	3 rd	ASM 3016 Assamese Novel: 1890-2015	<ul style="list-style-type: none"> Categorise the Assamese novels into different trends. Explain the effects of the socio-political development on Assamese novels. Design a spectrum of different themes used in Assamese novels. 	Unit 1: Trends of Assamese novel	Knowledge, Understand
				Unit 2: Rajanikanta Bordoloi: Rahdai Ligiri Rasna Barua: Seuji Patar Kahini Medini Choudhury: Banduka	Knowledge, Understand, Cognitive

				Behar	
				Unit 3: Debendranath Acharya: Jangam Mamani Roysom Goswami: Nilakanthi Braja Homen Borgohain: Pitaputra	Knowledge, Understand, Cognitive
				Unit 4: Bhupendranarayan Bhattacharya: Marudyan Debabrat Das: Dhusratar Kabya	Remember, Knowledge, Understand
12	3 rd	ASM 3026 Translation: Theory and Practice	<ul style="list-style-type: none"> • Illustrate the linguistic and cultural aspects of translation. • State the problems of different kinds of translation. • Justify the quality of different texts of translation. 	Unit 1: Linguistic aspects of translation with special attention to Roman Jakobson's essay 'On Linguistic Aspects of Translation' (from Translation Studies Reader, ed. Lawrence Venuti)	Knowledge, Understand, Cognitive, Analyse
				Unit 2: Cultural aspects of translation, and Translation and nationalism with special attention to Krishnakanta Handiqui's essay 'Anubadar Katha' (from Krishnakanta Handiqui Rachana Sambhar, ed. Jatindra Nath Goswami)	Knowledge about Translation, Understand, Cognitive

				<p>Unit 3: Equivalence in translation, loss and gain in translation, faithful translation. Ad-verbatim translation, semantic translation, idiomatic translation. Translation of scientific and literary texts, transcreation, adaptation, translation through apps.</p> <p>Study/Analysis of adaptation (to examine the difference emerged while adapting a text to a different medium): Bhabendranath Saikia's novel Antareep and his screenplay of Agnisnan (ed. Utpal Datta)</p>	<p>Knowledge, Understand, Cognitive</p>
				<p>Unit 4: Evaluation of translated works (to examine the standard of translation):</p> <p>Comparison between the English Mrityunjay (Trans. D.N. Bezboruah) and the original Assamese Mrityunjay (by Birendra Kumar Bhattacharyya).</p> <p>Comparison between the poems in Ancient Gongs (Trans. Pradip Acharya) and their original Assamese versions available in Hiren Bhattacharyyar Kabita: Prathamara Para Ataibor</p> <p>Comparison between Ahar Mahar Edin (Trans. Nirajana Mahanta Bezboruah) and the original Hindi</p>	<p>Knowledge, Understand, Analyse, Evaluate</p>

				<p>Ashadh Ka Ek Din (by Mohan Rakesh).</p> <p>Mini Projects on literary (such as poems, short stories, and others) as well as non-literary (such as pamphlets and advertisements) texts prescribed by the teacher in the class. These projects will be regarded as Home Assignments (10 marks). Sessional test(s) and Class Seminar(s) will carry additional 5 marks each. Home Assignments, Sessional test(s) and Class Seminar(s) will thus constitute 20 marks in total, reserved as the internal marks.</p>	
13	3 rd	ASM 3066 Varieties of the Assamese Language	<ul style="list-style-type: none"> Describe different varieties of the Assamese Language in the context of contemporary Linguistics. Organize geographical and social varieties of Assamese Language 	<p>Unit 1: Dialectology: Isogloss, Diaglossia; Dialect Geography: Methods of Regional Dialect Study; Regional Varieties in Assam: Upper Assam, Darangi, Morigayan and Lower Assam (Kamrupi, Goalporia)</p>	Knowledge, Understand, Cognitive, Analyse
				<p>Unit 2: Social Varieties: Methods of Social Dialect study, Social Varieties in Assam: Language forms of the Kaivartas and Moriyas.</p>	Knowledge, Understand, Cognitive, Analyse
				<p>Unit 3: Ethnic Varieties: Ethnicity and Language Variation, Methods of Ethnic Dialect Study, Ethnic</p>	Knowledge, Understand, Cognitive, Analyse

				varieties in Assam: Rabhamese, Mishing-Asamiya and Hajong-Asamiya	
				Unit 4 : Contemporary Assamese: Print and Electronic Media	Knowledge, Understand, Cognitive, Analyse
14	3 rd	ASM 3096 Assamese Vaisnavite, Saiva and Sakta Literature	<ul style="list-style-type: none"> • Categorise religious literature of Assam and compare Assamese Vaisnavite literature with Assamese Saiva –Sakta literature. • Elaborate the concept of Vaishnavism, Saivism and Saktism and Organize literary products under titles like Vaishnava, Sakta, and Saiva literature. • Interpret religious beliefs i.e. Vaishnava, Saiva and Sakta with keeping in mind their humanitarian outlook. • Generate human values out of the religious outlook prevalent in Assam. 	Unit 1: History, Philosophy and Background of Vaisnavite Movement in India with special reference to Assam.	Knowledge, Understand
				Unit 2: Concept of Vaisnavism (Bhaktibad) and Assamese Vaisnavite literature. Sankaradeva: Kirtan Ghosa Madhavadeva: Namghosa	Knowledge, Understand
				Unit 3: Concept of Saivism, history of Saivism in Assam and Assamese Saiva literature. Rudra Sinha: Siva Purana.	Knowledge, Understand
				Unit 4: Concept of Saktism, history of Saktism in Assam and Assamese Sakta literature. Ruchinath Kandali: Sri Sri Chandi.	Knowledge, Understand
15	4 th	ASM 4016 Textual Criticism and	<ul style="list-style-type: none"> • Explain the Manuscript tradition in different part of the world. 	Unit 1: Introduction: Definition, aims and objectives of	Knowledge, Understand, Analyse

		Manuscript Reading	<ul style="list-style-type: none"> • Explain mutilated text is restored. • Generate interest in preservation and restoration of intellectual heritage of a nation 	Textual Criticism	
				Unit 2: Theory of Textual Criticism and its application	Knowledge, Understand, Analyse
				Unit 3: History of Textual Criticism in Assam	Knowledge, Understand, Analyse
				Unit 4: Manuscript and features Assamese manuscripts including illustrated manuscripts Manuscript reading History of Assamese Script and Evaluation	Knowledge, Understand, Analyse
16	4 th	ASM 4026 Applied Linguistics	<ul style="list-style-type: none"> • Explain computational linguistics. • Plan to review literature applying discourse analysis. • State the tools for analyzing the Assamese language 	Unit 1: Computational Linguistics: Natural Language Processing: analyzing and using co-occurrences of words in text; context-free grammars and parsing.	Knowledge, Understand
				Unit 2: Discourse Analysis: The structure of discourse; Narrative Analysis; Conversation Analysis	Knowledge, Understand, Analyse
				Unit 3: Lexicography: Analysis of the lexicon: relations between words, levels of the lexicon,	Knowledge, Understand, Analyse

				lexical borrowing, lexical norm, linguistic purism; different types of dictionaries and different types of lexicographic design, electronic dictionaries, parts of the lexicographic entry, the microstructure and macrostructure of dictionary	
				Unit 4: Application of linguistic knowledge for first and second language teaching methods: Difference between first and second language learning, language teaching methods, Application of Descriptive Linguistics, Sociolinguistics and Psycholinguistics in language teaching.	Knowledge, Understand, Analyse,
17	4 th	ASM 4046 Assamese Short Story:1889-2015	<ul style="list-style-type: none"> Trace the development of the major trends of Assamese short stories. Describe the emotional effect of reading a few significant Assamese short stories. Interpret a short story. 	Unit 1: Trends of Assamese Short Stories. Lakshminath Bezbaroa: ‘Jayanti’ (from Adhunik Asamiya Galpa Sankalan, ed. Trailokyanath Goswami) Lakshidhar Sarma: ‘Byarthatar Dan’ (from Asamiya Galpa Sankalan, Pratham Khanda, ed. Homen Borgohain) Syed Abdul Malik: ‘Pran Powar Pichat’ (from Asamiya Galpa Sankalan, Dwitiya Khanda, ed.	Knowledge, Understand

				Homen Borgohain)	
				<p>Unit 2: Sourav Kumar Chaliha: ‘Ehat Daba’ (from Asamiya Chutigalpar Prabah: ed. Lilabati Saikia Bora)</p> <p>Mohim Bora: ‘Chakrabat’ (from Adhunik Asamiya Galpa Sankalan, ed. Trailokyanath Goswami)</p> <p>Nirupama Borgohain: ‘Anthropologyr Saponar Pachat’ (from Galpamanjari, ed. Sailen Bharali)</p> <p>Bhabendranath Saikia: ‘Grahan’ (from Asamiya Galpa Sankalan, Dwitiya Khanda, ed. Homen Borgohain)</p>	Knowledge, Understand
				<p>Unit 3: Nagen Saikia: ‘Bandha Kothat Dhumuha’ (from the aforementioned anthology)</p> <p>Pranab Jyoti Deka: ‘Bewaris Las’ (from the aforementioned anthology)</p> <p>Apurba Sarma: ‘Baghe Tapur Rati’ (from Asamiya Galpa Sankalan, Tritiya Khanda, ed. Homen Borgohain)</p>	Knowledge, Understand, Cognitive

				<p>Unit 4: Jehirul Hussain: 'Rang Kukurar Tupi' (from Rang Kukurar Tupi)</p> <p>Manoj Kumar Goswami: 'Nirbandhav' (from Aluminium-r Anguli)</p>	<p>Knowledge, Understand, Cognitive</p>
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21. MA English

SL. NO.	SEMESTER	PAPER CODE & TITLE	COURSE OUTCOMES	UNIT/ CHAPTER	BLOOM'S TAXONOMY LEVEL
1	1 st	ENG 1016 English Literary and Cultural History	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> • A chronological focus on English literary and cultural history. • An engagement with the essential timeline for contextualizing literature. A focus on location, culture, text and context in the shaping of literary traditions. A close processing of cultural and social imperatives in the development of the worlds of literary markers • An engagement that enables the placement of literary studies within a broad but grounded spectrum of reading processes that open new pathways of critical reception 	<p>Section A: Medieval to the Renaissance</p> <p>Feudalism and Social Stratification</p> <p>The Church and the Medieval World</p> <p>The Growth of Towns and Commerce</p> <p>Humanism and Renaissance in England</p> <p>Exploration and Travel</p> <p>The Print Revolution</p>	Remember, Understand, Analyse, Evaluate
				<p>Section B: The Enlightenment to the Nineteenth Century</p> <p>The Scientific Revolution</p> <p>Ideas of the Enlightenment</p>	Remember, Understand, Analyse, Evaluate

				<p>Beginnings of Modern Democracy</p> <p>Imperialism and the Consolidation of the British Empire</p> <p>The Industrial Revolution</p> <p>Darwinism</p>	
				<p>Section C: Modern to the Present</p> <p>The Contexts of the Modern World: Literature, Painting, Architecture</p> <p>Decolonization and the New International Order</p> <p>The Rise of ‘English’</p> <p>The ‘Woman’ Question and Gender Studies</p> <p>The Cultural Turn</p> <p>Migration, Consumerism and Globalisation</p> <p>The Smart World: Life in the 21st Century</p>	Remember, Understand, Analyse, Evaluate
2	1 st	ENG 1026		John Donne (1572-1631): Canonization The Flea	Remember, Understand, Analyse, Evaluate

		British Poetry	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> • A detailed chronological knowledge of British poetry (both canonical and non-canonical) and its contexts from its early times till the present. • A thorough grounding in the formal aspects of British poetry within a larger context of world poetry. • The practical application of literary criticism and theory about poetry as a form on close readings of the texts prescribed. • Enhanced descriptive, analytical and conceptual abilities in reading and writing about poetry 	Alexander Pope (1688-1744): Epistle to Dr Arbuthnot	Remember, Understand, Analyse, Evaluate
				William Wordsworth (1770-1850): Lines Composed a Few Miles above Tintern Abbey	Remember, Understand, Analyse, Evaluate
				John Keats (1795-1831): Ode on Indolence On Sitting Down to Read King Lear Once Again	Remember, Understand, Analyse, Evaluate
				Robert Browning (1812-1889): An Epistle Containing the Strange Medical Experience of Karshish, the Arab Physician	Remember, Understand, Analyse, Evaluate
				Gerald Manley Hopkins (1844-1889): God's Grandeur	Remember, Understand, Analyse, Evaluate
				William Butler Yeats (1865-1939): The Second Coming	Remember, Understand, Evaluate

				<p>Dylan Thomas (1914-1953): A Refusal to Mourn the Death, by Fire, of a Child in London</p> <p>Seamus Heaney (1939-2013): Digging The Tollund Man in Springtime</p> <p>Elizabeth Jennings (1926-2001): Song at the Beginning of Autumn A Game of Chess</p> <p>Simon Armitage (1963-): Look, Stranger Abstracting Electricity</p>	<p>Remember, Understand, Analyse, Evaluate</p> <p>Understand, Analyse, Evaluate</p> <p>Analyse, Evaluate</p> <p>Remember, Analyse, Evaluate</p>
3	1 st	ENG 1036 British Drama	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> • know and assess the playwrights in terms of their dramaturgy, themes and reception. • understand the use of dialogues by different playwrights. • would learn the play of gaze, language, gesture and silence both in the text and the miseen scene. 	<p>Unit 1: Genre/History/Practices</p> <p>Renaissance Comedy/Tragedy Sentimental Comedy Problem plays Absurd drama </p> <p>Modern Comedy Drama of terror and trauma New Woman Playwrights Theatre and</p>	<p>Understand, Analyse, Evaluate</p>

			<ul style="list-style-type: none"> would understand the social, political, economic and cultural impact of contemporary British drama and its place in world drama. 	<p>technology etc.</p> <p>Unit 2: Plays</p> <p>William Shakespeare (1564-1616): Hamlet</p> <p>Oliver Goldsmith (1728-1774): She Stoops to Conquer</p> <p>J.M. Synge (1871-1909): Riders to the Sea</p> <p>John Osborne (1929-1994): Look Back in Anger</p> <p>Harold Pinter (1930-2008): The Homecoming</p> <p>Edward Bond (1934-): Lear</p>	Understand, Analyse, Evaluate
4	1 st	ENG 1046 British Fiction	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> Grasp the evolution of British fiction through historical shifts and societal changes. Recognize the increasing diversity in authorial voices and their contributions to British literature. Analyze texts within their specific historical and cultural 	<p>Section A (Novels)</p> <p>Charles Dickens (1812-1870): Oliver Twist</p> <p>Thomas Hardy (1840-1928): The Woodlanders</p> <p>Virginia Woolf (1882-1941): To the Lighthouse</p> <p>Ian McEwan (1948-): Atonement</p>	Understand, Analyse, Evaluate

			contexts to appreciate their depth and significance.	<p>Section B (short stories)</p> <p>Rudyard Kipling (1865-1936): The Man Who Would be King</p> <p>Angela Carter (1940-1992): The Tiger's Bride</p>	Understand, Analyse, Evaluate
5	2 nd	ENG 2016 Life Writing	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> • The critical and analytical approach to life-writing and its generic variations • Students will be able to situate life-writing practices within the broader literary contexts from which they have emerged 	<p>Section A</p> <p>Charlotte Bronte (1816-1855): Letters:</p> <p>To Ellen Nussey, 7 August 1841</p> <p>To Constantin Heger, 8 January 1845</p> <p>To G. H. Lewes, 12 January 1848</p> <p>To W. S. Williams, 13 June 1849</p> <p>Salam Pax (1973-): The Baghdad Blog</p>	Understand, Analyse, Evaluate
				<p>Section B</p> <p>Maya Angelou (1928-2014): I Know Why the Caged Bird Sings</p> <p>Kamala Das (1934-2009): My Story</p>	Understand, Analyse, Evaluate

				Javier Marías (1951-): Written Lives William Dalrymple (1965-): Nine Lives: In Search of the Sacred in Modern India	
6	2 nd	ENG 2026 Women’s Writing	After completion of the course, learners will: <ul style="list-style-type: none"> • Women writing can be empowering cutting across the gender divide • To acknowledge the diverse experiences of women across time, nations and cultures • Understand the importance of context for interpreting women’s experience • Engage in critical self-reflection and engage in theoretically informed assessments 	Kate Chopin (1850-1904): The Awakening Isabelle Allende (1942-): The House of the Spirits Shirin Ebadi (1947-): Iran Awakening Yasmina Reza (1959-): The God of Carnage Carol Ann Duffy (1955-): Prayer The Love Poem Chimamanda Ngozi Adichie (1977-): We Should All Be Feminists Sojourner Truth (1797- 1883): Ain’t I a Woman?	Understand, Analyse, Evaluate
				SECTION A: Essays	Understand, Analyse,

7	2 nd	<p style="text-align: center;">ENG 2036 Indian Writing</p>	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> • The learners are expected to develop, at the end of the course, a broader horizon about: • The nature of Indian writing, in its contemporary aspects. • The interface between the nature of native writing and the literatures in English. • The social and historical circumstances that intersect the production of the chosen texts either in English or in English translation. 	<p>A.K Ramanujan (1929-1993): Is there an Indian Way of Thinking? An Informal Essay</p> <p>Aijaz Ahmed (1932-): Indian Literature: Notes towards the Definition of a Category</p>	Evaluate
				<p>SECTION B: Fiction & Drama</p> <p>Mohan Rakesh (1925-1972): Adhe Adhure</p> <p>Mahasweta Devi (1926-2016): Mother of 1084</p> <p>U.R. Ananthamurty (1932-2014): Samskara</p> <p>Amitav Ghosh (1956-): In an Antique Land</p>	Understand, Analyse, Evaluate
8	2 nd	<p style="text-align: center;">ENG 2046 Asian Writing</p>	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> • Familiarity of writings from different Asian locations • Identifying the diverse forms which take shape in these writings • Valuing the rich tapestry of the everyday lives of the people 	<p>Haruki Murakami (1949-): The Birthday Girl</p> <p>Bao Ninh (1952-): The Sorrow of War</p> <p>Jung Chang (1952-): Wild Swans: Three Daughters of China</p>	Understand, Analyse, Evaluate

				<p>Sun-mi Hwang (1963-): The Hen who Dreamed she Could Fly</p> <p>Sonali Deraniyagala (1964-): Wave</p> <p>Marjane Satrapi (1969-): Persepolis I</p>	
9	3 rd	<p>ENG 3016 World Poetry</p>	<p>After completion of the course, learners will:</p> <p>A familiarity with poetic texts and contexts from different parts of the world</p> <p>Evaluation of approaches to world poetry through reading of texts and contexts</p>	<p>Li Po (701-762): The River Merchant's Wife: A Letter</p> <p>Constantine Cavafy (1863- 1933): Waiting for the Barbarians</p> <p>Boris Pasternak (1890- 1960): English Lessons</p> <p>Nelly Sachs (1891-1970): Landscape of Screams</p> <p>Kaneko Mitsuharu (1895- 1975): Opposition</p>	<p>Understand, Analyse, Evaluate</p>

				<p>Jibanananda Das (1899-1954): Banalata Sen</p> <p>Alec Derwent Hope (1907-2000): Australia</p> <p>Carlos Drummond de Andrade (1902-1987): Travelling in the Family</p> <p>Nazim Hikmet (1902-1963): A Sad State of Freedom</p> <p>Faiz Ahmed Faiz (1911-1984): The Love We Had Before</p> <p>Zbigniew Herbert (1924-1998): Elegy of Fortinbras</p>	
10	3 rd	ENG 3026 World Drama	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> Students will develop the ability to close-read, interpret, and write about plays, not only as literary 	<p>Unit 1: History/Genre/Context/Practices</p> <p>This unit will require the students to engage with and</p>	Remember, Understand, Analyse, Evaluate

			<p>texts but also as performance artefacts.</p> <ul style="list-style-type: none"> • Enable the students to articulate their understanding of the relationship between literature and the historical/cultural contexts from where the plays emerge. • Understand the architecture of play-making, plot construction, dialogue, character development, symbols and motifs and staging. • Understand how, on the one hand, the dramatic and theatrical traditions of the West were appropriated, subverted and refashioned in colonial/postcolonial societies, and on the other, how the Western theatrical tradition enriched itself through exposure to the ancient traditions of the East. 	<p>understand the development of various genres and historical evolution of various theatres across the world, set within specific cultural contexts:</p> <ul style="list-style-type: none"> • Classical theatre • Folk & Aboriginal Theatres • Realism & Naturalism • Epic theatre, Theatre of Cruelty • Expressionism & Absurd Drama • Feminist & Queer Theatres • Post-colonial & Post-dramatic theatre 	
				<p>Unit 2: Sophocles (c.497-c.406 BCE): Antigone</p>	<p>Remember, Understand, Analyse, Evaluate</p>
				<p>Moliere (1622-73): Misanthrope</p>	<p>Remember, Understand, Analyse, Evaluate</p>

				Samuel Beckett (1906-1989): Waiting for Godot	Remember, Understand, Analyse, Evaluate
				Habib Tanvir (1923-2009): Agra Bazar	Remember, Understand, Analyse, Evaluate
				Dario Fo (1926-2016): Accidental Death of an Anarchist	Remember, Understand, Analyse, Evaluate
				Derek Walcott (1930-2017): Pantomime	Remember, Understand, Analyse, Evaluate
11	3 rd	ENG 3036 World Fiction	After completion of the course, learners will: <ul style="list-style-type: none"> • A familiarity with fictional texts and contexts from different parts of the world • Evaluation of approaches to world fiction through reading of texts and contexts 	Natsume Soseki (1867-1916): Botchan	Remember, Understand, Analyse, Evaluate
				Selma Lagerlof (1858-1940): The Wonderful Adventure of Nils Holgerssen	Remember, Understand, Analyse, Evaluate
				Jorge Luis Borges (1899-1986): The Circular Ruins The Aleph	Remember, Understand, Analyse, Evaluate
				Yesar Kemal (1923-2015): Memed, My Hawk	Remember, Understand, Analyse, Evaluate

				Ismail Kadare (1936-): The File on H	Remember, Understand, Analyse, Evaluate
				Salman Rushdie (1947-): Shame	Remember, Understand, Analyse, Evaluate
12	3 rd	ENG 3046 Modern Literary Criticism and Theory	<p>After completion of the course, learners will:</p> <p>This paper aims to enable students to: 16</p> <ul style="list-style-type: none"> • Engage with the criticism closely, • Understand how these criticism generates ideas and reading structures, • Look at critical concepts and how they are formulated, • Analyse the critical processes involved theorizations • Situate criticism and theory through an understanding of concepts and discourses • Facilitate familiarity with critical texts and reading modes • Enable evaluation of approaches to modern literary criticism and theory through reading of texts 	Ferdinand de Saussure (1857-1913): Nature of the Linguistic Sign	Remember, Understand, Analyse, Evaluate
				Michel Foucault (1926-1984): What is an Author?	Remember, Understand, Analyse, Evaluate
				Chinua Achebe (1930-2013): Colonialist Criticism	Remember, Understand, Analyse, Evaluate
				Stuart Hall (1932-2014): Cultural Studies and its Theoretical Legacies	Remember, Understand, Analyse, Evaluate
				Susan Sontag (1933-2004): Against Interpretation	Remember, Understand, Analyse, Evaluate
				Pierre Macherey (1938-): Borges and the Fictive Narrative	Remember, Understand, Analyse, Evaluate

13	4 th	<p style="text-align: center;">ENG 4016</p> <p style="text-align: center;">Indian Writing in English</p>	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> • A theoretical understanding of the field. • A perspective on the growth of various genres of writing in the Indian context. • The ability to amalgamate the field in the broader frameworks of Literatures in English. 	<p>SECTION A: PROSE</p> <p>Ashis Nandy: The Uncolonized Mind: A Post-Colonial View of India and the West</p> <p>Arundhati Roy: The End of Imagination</p>	Remember, Understand, Analyse, Evaluate
				Agha Shahid Ali: ‘Postcard from Kashmir’, ‘Snowmen’, ‘The Season of the Plains’	Remember, Understand, Analyse, Evaluate
				Nissim Ezekiel: ‘Night of the Scorpion’, ‘Background, Casually’, ‘Poem of the Separation’	Remember, Understand, Analyse, Evaluate
				Kamala Das: ‘My Grandmother’s House’, ‘A Hot Noon in Malabar’, ‘The Sunshine Cat’, ‘The Invitation’	Remember, Understand, Analyse, Evaluate
				Keki N. Daruwalla: ‘Hawk’, ‘The King Speaks to the Scribe’, ‘Fish are Speared by Night’	Remember, Understand, Analyse, Evaluate
				Section A: Prose	Remember, Understand,

14	4 th	ENG 4046 Writings from India's Northeast (Open Elective)	<p>After completion of the course, learners will:</p> <p>The students would be able to familiarize themselves with:</p> <ul style="list-style-type: none"> • The cultures of Northeast India as reflected in some of its writings • The diverse traditions of the region • The socio-literary dimensions of the region and its people 	Maheswar Neog: Romance of a University	Analyse, Evaluate
				<p>Section B: Poetry</p> <p>Chandra Kanta Murasingh: Slumber</p> <p>Mona Zote: What Poetry Means to Ernestina in Peril</p> <p>Anubhav Tulasi: It's Been Quite Awhile Vincent Post-Mortem</p> <p>Robin S. Ngangom: Funerals and Marriages</p>	Remember, Understand, Analyse, Evaluate
				<p>Section D: Drama</p> <p>Ratan Thiyam: Nine Hills, One Valley</p>	Remember, Understand, Analyse, Evaluate
15	4 th	ENG 4056 Literary Theory	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> • To acquaint students with representative texts from different genres of African Writing. • To enable students to appreciate issues related to African society and culture, especially in the postcolonial context. • 	Roland Barthes (1915-1980): From Work to Text	Remember, Understand, Analyse, Evaluate
				Jacques Lacan (1901-1981): Seminar on The Purloined Letter	Remember, Understand, Analyse, Evaluate
				Jacques Derrida (1930-2004): Structure, Sign and Play in the Discourse of the Human Sciences	Remember, Understand, Analyse, Evaluate

			<ul style="list-style-type: none"> To acquaint students with some of the major issues that African literature is concerned with. These include the issues of race, ethnicity, language, identity and culture. 	<p>Hayden White (1928-2018): The Historical Text as Literary Artifact</p> <p>Luce Irigaray (1930-): Sexual Difference</p> <p>Homi K. Bhabha (1949-): Dissemination</p> <p>Edward Said (1935-2003): Travelling Theory</p>	<p>Remember, Understand, Analyse, Evaluate</p> <p>Remember, Understand, Analyse, Evaluate</p> <p>Remember, Understand, Analyse, Evaluate</p> <p>Remember, Understand, Analyse, Evaluate</p>
16	4 th	ENG 4066 African Writing	<p>After completion of the course, learners will:</p> <ul style="list-style-type: none"> To acquaint students with representative texts from different genres of African Writing. To enable students to appreciate issues related to African society and culture, especially in the postcolonial context. To acquaint students with some of the major issues that African literature is concerned with. These include the issues of race, ethnicity, language, identity and culture. 	<p>Chinua Achebe (Nigeria, 1930-2013): Things Fall Apart</p> <p>J. M. Coetzee (South Africa, 1940-): Foe</p> <p>Wole Soyinka (Nigeria, 1934-): Death and the King’s Horseman</p> <p>Frantz Fanon (Martinique, 1925-1961): “The Negro and Language”</p> <p>Buchi Emecheta (Nigeria 1944-2017): “Feminism with a Small ‘f’”</p>	<p>Remember, Understand, Analyse, Evaluate</p> <p>Remember, Understand, Analyse, Evaluate</p> <p>Remember, Understand, Analyse, Evaluate</p>

				<p>Ayi Kwei Armah (Ghana, 1939-): “News”</p> <p>Noemia de Sousa (Mozambique, 1926-2002): “If You Want to Know Me”</p> <p>Gcina Mhlophe (South Africa, 1958-): “Sometimes When It Rains”</p> <p>Jared Angira (Kenya, 1947-): “If”</p>	<p>Remember, Understand, Analyse, Evaluate</p>
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22. Post Graduate Diploma in Computer Application (PGDCA)

SL. NO.	SEMESTER	PAPER CODE & TITLE	COURSE OUTCOMES	UNIT/ CHAPTER	BLOOM'S TAXONOMY LEVEL
1	1 st	PGDCAP1 ICT Hardware	<ul style="list-style-type: none"> ICT helps a user to know the various peripherals of computer systems and also the fundamental knowledge of computer like how a computer is assemble and also the knowledge of various utilities like driver installation, de-fragmentation etc. 	Unit 1	Remember, Understanding
				Unit 2	Remember, Understanding
				Unit 3	Remember, Understanding, Analyse
				Unit 4	Remember, Understanding, Analyse
				Unit 5	Remember, Understanding, Analyse
				Unit 6	Remember, Understanding, Analyse
2	1 st	PGDCAP2 Programming in C	<ul style="list-style-type: none"> The goal of the course is to impart thorough C language understanding. The ability to design logics will enable students to write C programs and apps. Additionally, they may quickly transition to any other language in the future by 	Unit 1: Introduction to Programming	Remember, Understanding, Analyse
				Unit 2 : Concept of Computing	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 3 : Programming	Understanding ,Apply ,

			understanding the fundamentals of programming.	Languages	Analyse, Evaluate
				Unit 4: File Processing	Understanding ,Apply , Analyse, Evaluate
3	1 st	PGDCAP3 Overview of Operating System (DOS, Windows, UNIX / Linux and Shell Programming)	<ul style="list-style-type: none"> Make appropriate decisions during the configuration process to create a properly functioning Linux environment. Use programs and utilities to administer a Linux machine. Explain how a Linux server can be integrated within a multi platform environment. Analyze the need for security measures for a Linux environment. 	Unit 1	Remember, Understanding ,Apply
				Unit 2	Remember, Understanding ,Apply
				Unit 3	Remember, Understanding ,Apply
4	1 st	PGDCAP4 Introduction to Office Automation	<ul style="list-style-type: none"> Upon finishing the course, students will have the ability to create documents, spreadsheets, brief presentations, and familiarize themselves with the internet. 	Unit 1: Word Processing	Remember,Apply ,Analyse,Evaluate
				Unit 2: Spreadsheet	Remember,Apply ,Analyse,Evaluate
				Unit 3: Presentation Tools	Remember,Apply ,Analyse,Evaluate
				Unit 4: DTP Software	Remember,Apply , Analyse
				Practical	Remember,Apply ,Analyse,Evaluate

5	2 nd	PGDCAP5 Database Management System	DBMS is important because it manages the data efficiently and allows users to perform multiple tasks on it with the ease. Without DBMS, we might have to do it manually and would have taken more time. Also DBMS helps preserving the data in many forms and which we can use anywhere and may be after ages, to keep a record of what we have done to what we will do, everything has to be kept in form of some record. And DBMS provides efficient ways to accomplish that task. DBMSs include MySQL, Microsoft SQL Server, Oracle, IBM DB2 etc	Unit 1	Understanding ,Apply , Analyse, Evaluate
				Unit 2	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 3	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 4	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 5	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 6	Remember, Understanding ,Apply , Analyse, Evaluate
6	2 nd	PGDCAP6 Data Structure through C language	<ul style="list-style-type: none"> This subject contains a basic concept of linear and non linear data structure. Brief description of static and dynamic memory allocation for example array and different types of linked lists. Various algorithms related to add and delete memories from array, linked lists, stacks, queues. 	Unit 1: Introduction to data structure	Remember, Understanding
				Unit 2: Arrays	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 3: Stack and queues	Remember, Understanding ,Apply , Analyse, Evaluate

			<ul style="list-style-type: none"> Fundamental concept of trees and graphs. Concept of time and space complexity of various searching and sorting algorithms. 	Unit 4: Linked lists	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 5: Trees	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 6: Searching and sorting	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 7: Graphs	Remember, Understanding ,Apply , Analyse, Evaluate
7	2 nd	PGDCAP7 Internet and Web Technology	<ul style="list-style-type: none"> Web technology refers to the means by which computers communicate with each other using markup languages and multimedia packages. It gives us a way to interact with hosted information, like websites. Web technology involves the use of hypertext markup language (HTML) and cascading style sheets (CSS) 	Unit 1: Introduction to internet	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 2: Internet technology and protocols	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 3: File transfer protocol	Understanding ,Apply , Analyse, Evaluate
				Unit 4: Internet management security concepts	Understanding ,Apply , Analyse, Evaluate

				Unit 5: HTML	Understanding ,Apply , Analyse, Evaluate
8	3 rd	PGDCAEL3 Computer Graphics	<ul style="list-style-type: none"> To list the basic concepts & components used in computer graphics. To implement various algorithms to scan, convert the basic geometrical primitives, transformations, Area filling, clipping. To describe the importance of viewing and projections. To design an application with the principles of virtual reality. Provide an understanding of how to scan convert the basic geometrical primitives, how to transform the shapes to fit them as per the picture definition. 	Unit 1: Introduction	Remember, Understanding
				Unit 2: Input devices	Remember, Understanding ,Apply , Analyse
				Unit 3: Output devices	Remember, Understanding , Analyse
				Unit 4: Line Drawing Algorithms	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 5: Output primitives and 2-d transformation	Remember, Understanding ,Apply , Analyse, Evaluate
				Unit 6: Clipping operations and algorithm	Remember, Understanding ,Apply , Analyse, Evaluate