Programme Code	Name of the Programme	Course code	Title of the Course	Course Outcomes
		U231A1	Pothuth Tamil-I	Tamil UG Course Outcomes.pdf
		U23CT1	Ikkala Ilakkiyam	
		U23CT2	Tamilaga Varalarum Panpadum	
		U23GT38	Nookku Noolgal	
		U23SET1	Sutrulaviyal	
		U23FT1	Adippadaith Thamil	
		U231A2/ U231H2	Pothuth Thamil-2	
		U23CT3	Ara Ilakkiyam	
		U23CT4	Tamil Ilakkiya Varalaru	
		U23GT36	Nadagaviyal	
		U23SET2	Ethaliyal	
		U23SET3	Ariviyal Thamil	
		U231A3/ U231H2	Pothuth Thamil-3	
		U23CT5	Kappiyangal	
		U23CT6	Nannool-Eluthu	
		U23GT33	Koyirkalaigal	
		U23SET4	Molipeyarpiyal	

ULTA	**B.A. Tamil**	U23SET5	Panivaipputh Thamil
		U231A4/ U231H4	Pothuth Thamil-4
		U23CT7	Bakthi Ilakkiyam
		U23CT8	Nannool-Chol
		U231H1	Vilamparakkalai
		U23SET6	Udagaviyal
		U23SET7	Petchukkalaith thiran
		U23CT9	Sitrilakkiyam
		U23CT10	Ilakkanam-3
		U23CT11	Nattuppuraviyal
		U23CT12	Ikkalath Thamil
		U23DT01	Suvadiyiyal value educationU23VE1
		U23DT02	Agarathiyiyal
		U23SIT1U23VE1 Value Education	Summer Internship/Industrial Training
		U23CT13	Sanga Ilakkiyam
		U23CT14	Ilakkanam-4
		U23CT15	Ilakkiyath Thiranaivu
		U23DT03	Kanninith Thamil
		U23DT04 Extension Activity	Semmolith Thamil

		U23PCT1	Pottith Thervukalukuriya Thamil		
		U232A1	English -I	**CO1**	Develop and integrate the use of the four language skills i.e. Reading, Listening, Speaking and Writing
				CO2	Understand the total content and underlying meaning in the context.
				CO3	Form the habit of reading for pleasure and for information
				CO4	Comprehend material other than the prescribed text
				CO5	Develop the linguistic competence that enables them, in the future, to present the culture and civilization of their nation.
		U23CV1	Introduction To Literature	**CO1**	To introduce the students to a chronological survey of English Literature
				CO2	To instill the historical sense in students so as to help them place literary works in this temporal context
				CO3	To inculcate in students the ability to appreciate western culture to understand complementary nature of cultures across the world
				CO4	To help students prepare well for competitive and qualifying exam like NET and TRB
				CO5	To empower students with deep reading and scanning skills for effective
		U23CV2	Indian Writing In English	**CO1**	Appreciate the historical trajectory of various genres of Indian Writing in English from colonial times till the present
				CO2	Analyze Indian literary texts written in English in terms of colonialism ,post colonialism,regionalism,and nationalism
				CO3	Understand the role of English as a medium for
					Political awakening and the use of English in India for creative writing
				CO4	Analyze how the sociological, historical, cultural and political context impacted the texts selected for study
				CO5	Evaluate critically the contributions of major Indian English poets and dramatists
				CO1	Gain extensive insight into the history of English literature, while laying special emphasis on various literary movements, genres and writers that are held to be the representatives of their times.
				CO2	Evaluate the way socio-cultural and historical phenomena influence the literary production of a particular period

		U23GV15	Social History Of England	**CO3**	Familiarize themselves with the socio-cultural ambience and the discursive frameworks of various ages
				CO4	Develop a nuanced appreciation of the literary stalwarts of those times.
				CO5	Gain in-depth understanding on the growth of the English language under the influence of various other languages including Latin and French, besides being mentored in the structural nitty-gritties of the language.
		U23SEV1	Popular Literature And Culture	**CO1**	Have a diachronic understanding of the evolution of philosophy from the time of Greek masters of 20th Century
				CO2	Have an awareness of the major schools of thought in western philosophy
				CO3	Have a healthy epistemological foundation at Undergraduate level that ensures scholarship at advanced levels of learning
				CO4	Talk about some of the key figures in philosophy
				CO5	Analyze and appreciate texts critically from different philosophical perspectives
		U23FV1	English For Communication	**CO1**	Identify the basic principles of communication
				CO2	Analyze the various types of communication
				CO3	Make use of the essential principles of communication
				CO4	Identify the prominent methods and models of Communication.
				CO5	Learn about the four skills of language and get familiarized with them.
		U232A2	English-II	**CO1**	Learn to introduce themselves and talk about everyday activities confidently
				CO2	Be able to write short paragraphs on people, places and events
				CO3	Identify the purpose of using various tenses and effectively employ them in speaking and writing

				CO4	Gain knowledge to write subjective and objective descriptions
				CO5	Identify and use their skills effectively in formal contexts.
		U23CV3	British Literature-I	**CO1**	Demonstrate knowledge of the major social, political, philosophical, and scientific events forming the backdrop for the development of early British Literature.
				CO2	Synthesize, integrate, and connect information by writing essays using techniques of criticism and evaluation.
				CO3	Read and discuss the themes, approaches, styles, and contributions to the development of British literature from the Medieval Period to the end of the eighteenth-century
				CO4	Distinguish between the characteristics of British literary movements in discussing and writing about British literature.
				CO5	Write about literature using standard literary terminology and other literary conventions.
		U23CV4	American Literature-I	**CO1**	To comprehend the history and culture of the United States of America from the colonial period to the present.
				CO2	Gain insight into the social-cultural-ecological-political, historical, religious and philosophical contexts of the American spirit in literature.
				CO3	Evaluate the thoughts, beliefs, customs, struggles, and visions of African American writers
				CO4	To understand the American style of writing and learn ideologies like Transcendentalism, corruption, pride, power and obsession along with spiritualism and Christian values.
				CO5	Critically analyze American literary texts in the light of several movements in literature and understand the changing faces of texts with developments in culture. Students can compare/contrast literary works through an analysis of genre, theme, character, and other literary devices.
ULEN	**B.A. ENGLISH**	**U23GV16**	History Of English Literature	**CO1**	Gain in-depth understanding on the growth of the English language under the influence of various other languages including Latin and French, besides being mentored in the structural nitty-gritties of the language.
				CO2	Evaluate the way socio-cultural and historical phenomena influence the literary production of a particular period
				CO3	Familiarize themselves with the socio-cultural ambience and the discursive frameworks of various ages
				CO4	Develop a nuanced appreciation of the literary stalwarts of those times.
				CO5	Gain in-depth understanding on the growth of the English language under the influence of various other languages including Latin and French, besides being mentored in the structural nitty-gritties of the language.
				CO1	Demonstrate an understanding of the principles of public speaking
				CO2	Recognize barriers to public speaking and identify how to avoid them

		U23SEV2	Public Speaking Skills	**CO3**	Understand how to give effective verbal and nonverbal feedback
				CO4	Learn about planning speech organization for the intended audience
				CO5	Practice effective group delivery and speech in formal context.
		U23SEV3	Personality Enrichment	**CO1**	Be able to understand, analyze develop and exhibit accurate sense of self.
				CO2	Learn to think critically
				CO3	Demonstrate knowledge of personal beliefs and values and a commitment to continuing personal reflection and reassessment.
				CO4	Learn to balance confidence with humility and overcome problems associated with personality.
				CO5	Understand that personality is an important attribute in one_s life not only for success in professional life, but also in determining the overall behaviour and attitude of the individual.
		U232A3	English -III	**CO1**	Broaden their outlook and sensibility and be acquainted with cultural diversity and divergence in perspectives.
				CO2	Be updated with basic informatics skills and attitudes relevant to the emerging knowledge society
				CO3	Produce grammatically and idiomatically correct language.
				CO4	Gain knowledge in writing techniques to meet academic and professional needs.
				CO5	Be equipped with sufficient practice in Vocabulary, Grammar, Comprehension and Remedial English from the perspective of career oriented tests.
		U23CV5	British Literature-II	**CO1**	Exhibit an understanding of and appreciation for key works in British literature, as evidenced in daily work and course discussions.
				CO2	Demonstrate an understanding of periodization, theme, genre, motif, and so on, in British literature.
				CO3	Establish an understanding that historical, cultural, spiritual, and ethical issues, among others, shape human experiences and impact motivations.
				CO4	Respond to literature with facility, both orally and on paper, on important thematic considerations having to do with literary and historical milieu, culture, human responsibility, morality, ethics, and the manner and causes by which humans interact with one another.
				CO5	Analyze and express about British literature using standard literary lexicon and other literary conventions.
				CO1	Understand the depth and diversity of American literature, keeping in mind the history and culture of the United States of America from the colonial period to the present.

		U23CV6	American Literature-II	**CO2**	Understand the social-cultural-ecological-political, historical, religious and philosophical contexts of the American spirit in literature.
				CO3	Evaluate the thoughts, beliefs, customs, struggles, and visions of African American writers
				CO4	Understand the American style of writing and ideologies like Transcendentalism, corruption, pride, power and obsession along with spiritualism and Christian values.
				CO5	Critically analyze American literary texts in the light of several movements in literature and understand the changing faces of texts with developments in culture. Students can compare/contrast literary works through an analysis of genre, theme, character, and other literary devices.
		U23GV17	Communicative English: Grammar, Comprehension& Composition	**CO1**	Recall fundamental concepts of the four linguistic skills.
				CO2	Apply different styles communication in professional context.
				CO3	Participate in different planned and extempore communicative activities.
				CO4	Interpret and discuss facts as well as information in each context.
				CO5	Critique literary texts that develop an appreciation for human values.
		U23SEV4	Entrepreunurial Skill	**CO1**	Understand the foundation of Entrepreneurship Development and its theories.
				CO2	Explore entrepreneurial skills and management function of a company.
				CO3	Identify the type of entrepreneur and the steps involved in an entrepreneurial venture.
				CO4	Understand various steps involved in starting a venture.
				CO5	Explore marketing methods & new trends in entrepreneurship.
		U23SEV5	Spoken And Presentation Skills	**CO1**	Recall fundamental concepts of the phonetics skills.
				CO2	Apply different sound production for effective articulation .
				CO3	Participate in accent training activities to refine accent and pronunciation.
				CO4	Be familiar with IPA and use dictionaries to learn correct pronunciation

				CO5	Use all the learning experience to generate sentences with accurate accent.
		U232A4	English -IV	**CO1**	Learn to communicate effectively and appropriately in real life situation.
				CO2	Use English effectively for study purpose across the curriculum
				CO3	Develop interest in and appreciation of Literature
				CO4	Develop and integrate the use of the four language skills
				CO5	Enhance their language skills especially in the areas of grammar and pronunciation.
		U23CH1	History of Ancient India up to 1206 CE	CO 1	Outline the characteristic features of pre and proto historic cultures in India.
				CO 2	Discuss the impact of the Vedic culture on Indian society and religion.
				CO 3	Examine Ashoka's policy of Dhamma.
				CO 4	Justify Gupta Age as a classical age.
				CO 5	Describe the nature of Post-gupta polity and the invasions of Mahmud of Ghazni and Muhammed of Ghor.
		U23CH2	History of Tamil Nadu up to1363CE	CO 1	Describe the various sources for the study of history of Tamil Nadu.
				CO 2	Examine the various aspects of Sangam Age.
				CO 3	Explain the rise of Pallavas and their cultural contribution.
				CO 4	Estimate the supremacy of the Chola power.
				CO 5	Outline the achievements of the Second Pandyan Empire.
		U23GH01	Introduction to Archaeology	CO 1	Define archaeology and explain different kinds of archaeology.
				CO 2	Trace the archaeological developments from its beginnings.
				CO 3	Describe the contribution of early archaeologists in India

				CO 4	Explain the methods and techniques of archaeology.
				CO 5	Classify the artefacts and describe the various types of analysis.
		U23FH1	Introduction to History	CO 1	Describe the meaning and definition of history.
				CO 2	Explain the relationship between history and allied disciplines.
				CO 3	Illustrate the use of facts in writing history.
				CO 4	Examine the concept of causation in history.
				CO 5	Develop an essay based on sources using foot notes and bibliography.
		U23SEH1	Introduction to Tourism	**CO 1**	List out the various components and elements of tourism
				CO 2	Explain the types and forms of tourism.
				CO 3	Describe the roles of Travel Agent
				CO 4	Explain the roles of Tour Operators
				CO 5	Examine the importance of travel documents
		U23CH3	History of Medieval India - 1206 - 1707 CE	**CO 1**	Describe the foundation of the Delhi Sultanate and its early dynasties
				CO 2	Elucidate the administration of the Delhi Sultanate and appreciate the Bhakthi and Sufi Movements
				CO 3	Discuss the genesis and the conquest of the Mughals
				CO 4	Outline the art and architecture and administration of the Mughals
				CO 5	Illustrate the administration, art and architecture during the Bahmini and Vijayanagar kingdoms
				CO 1	Outline the rule of the Madurai Sultanate.
				CO 2	Explain the impact of the Vijayanagar rule in Tamilaham.

		U23CH4	History of Tamil Nadu - 1311 – 1800 CE	CO 3	Compare and contrast the achievements of the Nayaks of Madurai, Senji and Thanjavur.
				CO 4	Assess the contribution of the Marathas to Tamil culture.
				CO 5	Examine Poligar rebellion as an early resistance against British imperialism.
		U23GH02	Western Political Thought	CO 1	Describe the political philosophy of Plato and Aristotle.
				CO 2	Discuss the Social Contract theory.
				CO 3	Compare the political ideas of Machiavelli and John Locke
				CO 4	Justify the advantages of utilitarian philosophy.
				CO 5	Describe the political ideas of Karl Marx and Antonio Gramsci.
		U23SEH2	Indian Constitution	**CO 1**	Describe the salient features of the Indian Constitution
				CO 2	Discuss the fundamental rights and Directive Principles.
				CO 3	Elaborate the Structure and Functions of Union Government
				CO 4	Explain the Structure and Functions of State Governments
		U23SEH3	Basic Journalism	**CO 1**	Describe the types and determinants of news.
				CO 2	Elaborate the newspaper organization structure.
				CO 3	Elaborate the role, qualities, and responsibilities of a reporter.
				CO 4	Explain the types of reporting.
				CO 5	Discuss the role, qualities, and responsibilities of an editor.
				CO 1	Trace the causes for the advent of the Europeans to India
				CO 2	Discuss the outcome of the British-French rivalry

		U23CH5	History of India - 1707 - 1857 CE	**CO 3**	Describe the strategies used by the British to capture power like the Doctrine of Lapse, Subsidiary alliance etc.
				CO 4	Evaluate the administration and economic policies of British and its consequences like the Famine, Drain of wealth etc.
				CO 5	Elucidate the Indian response to the British especially the peasant and tribal uprisings, Poligar rebellion and 1857 revolt.
		U23CH6	History of Tamil Nadu since 1801 CE	**CO 1**	Appreciate the contribution of early resistant movements in India
				CO 2	Elucidate the nature and importance of the social movements in India
				CO 3	Appreciate the contribution of Tamil Nadu towards Freedom movement
				CO 4	Describe the various welfare policies undertaken by the Governments in the State
				CO 5	Discuss and comprehend various issues in Tamil Nadu like the reservation, Sri Lankan Tamil issue etc.
		U23GH03	Indian Political Thought	**CO 1**	Describe Kautilya's ideal of a State and administration.
				CO 2	Elucidate the ideas of Medieval thinkers like Barani and AbulFazal
				CO 3	Discuss the ideas of early modern thinkers like Raja Ram Mohan Roy, Ranade, Gokhale, Gandhi and Nehru.
				CO 4	Examine the ideas of radical political thinkers such as Bharathi and AurobindoGhosh
				CO 5	Evaluate the social impact of the ideas of Periyar and Ambedkar.
		U23SEH4	Entrepreneurship Development	**CO 1**	List out the traits of an entrepreneur
				CO 2	Explain how to start small industry and related government subsidies
				CO 3	Describe how to market the products produced.
				CO 4	Explain the various quality assurance techniques
				CO 5	Examine the importance of human behaviour and stress management.
				CO 1	Describe the management principles.

		U23SEH5	Introduction to Management	**CO 2**	Explain the various aspects of marketing management.
				CO 3	Demonstrate the significance production management.
				CO 4	Explain the principles of human resource management.
				CO 5	Demonstrate the utility of financial management.
		U23CH7	Freedom Struggle in India	**CO 1**	Assess the role of the socio-religious movements in India
				CO 2	Compare and contrast between the moderates and extremists
				CO 3	Elucidate Gandhi's leadership and transforming India's freedom struggle based on mass movements
				CO 4	Describe the Constitutional provisions and legislations for women
				CO 5	Discuss the causes and consequences of the Partition of India
		U23CH8	History of Modern Europe - 1789 - 1919 CE	**CO 1**	Assess the legacy of French Revolution and the life and contribution of Napoleon
				CO 2	Discuss the Metternich system and its impact
				CO 3	Appreciate the efforts to bring peace in the post Napoleonic era and the unification of Italy and Germany
				CO 4	Describe the Eastern Question and spread of Nationalism in Eastern Europe
				CO 5	Elucidate the causes, course and consequences of the First World War
ULHIE1	B.A. History	U23GH04	Modern Governments	CO 1	Describe the meaning and types of constitution.
				CO 2	Explain the different types of government.
				CO 3	List the powers and functions of the Legislature
				CO 4	Highlight the powers and functions of the Executive.
				CO 5	Evaluate the significance of Judicial Review.

		U23SEH6	Computer Training	**CO 1**	Describe the computer components.
				CO 2	Explain how to create and save a word document
				CO 3	Demonstrate how to use word document by typing a CV or a letter.
				CO 4	Explain how to create a Power Point presentation.
				CO 5	Demonstrate a slide show presentation using Power Point.
		U23SEH7	Hotel Management	**CO 1**	Describe the salient features of the Hotels
				CO 2	Elaborate the Structure and Functions of the various sections of the Hotels
				CO 3	Explain the Hotel chains and important Hotel Organisations
				CO 4	Explain the Structure and Functions of the Front office
				CO 5	Discuss the uses of computers in Hotels
		U23CH9	History of the World 1919 -2020 CE	CO 1	Discuss the impact of Fascism and Nazism in the interwar years.
				CO 2	Examine the factors that led to the Cold War and describe its various stages.
				CO 3	Examine the nature of anti-colonial struggle in the Afro-Asian countries.
				CO 4	Discuss the impact of of Arab nationalism and describe the Israel-Palestine Wars.
				CO 5	Discuss the causes and consequences of decline of the Soviet Union.
		U23CH10	Selected Themes in History of U.S.A	**CO 1**	Assess USA's efforts to abolish slavery and reconstruction of the South post-Civil War
				CO 2	Discuss about the Westward movement and rise of big business and its consequences
				CO 3	Describe US attempts to become imperialist and its involvement in the First World War
				CO 4	Evaluate the transformation of US as a world power and its role in the Cold War

				CO 5	Elucidate America's multiculturalism and politics over War on Terrorism
		U23CH11	History of Madurai (Regional History)	**CO 1**	To trace knowledge about the Sources and Physical features
				CO 2	Identify the various Ancient Dynasties and Rulers
				CO 3	To acquire the knowledge of the Economy , Culture and Religion
				CO 4	Evaluate the role of Madurai in the Indian Freedom Movement
				CO 5	Assess the Heritage and Historical important Monuments
		U23CH12	Women Studies	**CO 1**	Evaluate the gender perspective in all domains of knowledge in India
				CO 2	Assess the role of education for women empowerment
				CO 3	Discuss the role of women in economic development
				CO 4	Describe the Constitutional provisions and legislations for women
				CO 5	Elucidate the policies brought in by the government for motivating women
		U23DH01	History of Dravidian Movement	**CO 1**	Examine the Growth of Nationalism as response to British Colonial Rule in Burma and Malaya
				CO 2	Explain French Colonial Administration and the Nationalist response in Vietnam and Analyse the Monarchic al State in Thailand
				CO 3	Trace the Emergence of Dutch Colonialism in Indonesia and Nationalist Uprising
				CO 4	Assess the Spanish Colonialism and US Colonialism in Philippines
				CO 5	Compare the effects of Japanese Invasion in South East Asian Nations and Post-War Nationalism
		U23DH02	History of Revolutions	**CO 1**	Assess the contribution of American Revolution
				CO 2	Evaluate the achievements of the French Revolution
				CO 3	Discuss the course and outcome of the Russian Revolution

		U23DH02	History of Revolutions	**CO 4**	Discuss the significance of the Chinese Revolution
				CO 5	Give an account of the Cuban Revolution
		U23DH03/U23DH04	Panchayat Raj System in India	**CO 1**	Describe Kautilya's ideal of a State and administration.
				CO 2	Elucidate the ideas of Medieval thinkers like Barani and AbulFazal
				CO 3	Discuss the ideas of early modern thinkers like Raja Ram Mohan Roy, Ranade, Gokhale, Gandhi and Nehru.
				CO 4	Examine the ideas of radical political thinkers such as Bharathi and AurobindoGhosh
				CO 5	Evaluate the social impact of the ideas of Periyar and Ambedkar.
		U23CH13	Contemporary History of India	**CO 1**	Assess the contribution of Jawaharlal Nehru as the architect of modern India.
				CO 2	Evaluate the achievements of Indira Gandhi's government
				CO 3	Describe the administration of National Front Government.
				CO 4	Discuss the New Economic Policy
				CO 5	Evaluate the administration of United Front government.
		U23DH06	HISTORY OF LATIN AMERICA: FROM DISCOVERY TO LIBERATION	**CO 1**	Give an account on discovery and Conquest of Latin America
				CO 2	Discuss the Colonization of Spain and Portugal
				CO 3	Discuss the causes of the Liberation Movement
				CO 4	Explain the US and Latin American Countries Diplomatic Relationships.
				CO 5	Describe the Cold war and World Politics in Latin America.
				CO 1	Describe the Development of Science and Technology in Colonial India
				CO 2	Evaluate the Post-Independent Scientific Policies

		U23CH14	History of Science and Technology in India	**CO 3**	Discuss the Implications of Technology in Growth of Agriculture
				CO 4	Analyse the Achievements in Space Technology
				CO 5	Assess the contributions of Scientist to Modern Science in India
		U23CH15	International Relations since 1919 /History of Latin America	**CO 1**	Assess the role of militarism in international relations in the interwar years.
				CO 2	Evaluate the achievements of the UNO
				CO 3	Discuss the Cold War politics
				CO 4	Evaluate the role of Gorbachev in bringing the Cold War to an end
				CO 5	Discuss the contemporary issues in international relations.
		U23DH05/	History of China and Japan	**CO 1**	Give an account of Chinese Revolution of 1911 and May Fourth Movement
				CO 2	Discuss the role of Japan in the First World War.
				CO 3	Discuss the developments in China under Mao.
				CO 4	Explain the policy of Greater East Asia Co- prosperity Sphere.
				CO 5	Describe the economic condition of China and Japan in the twentieth century.
		U23DH07/	Introduction to Historiography	**CO 1**	To understand what is History
				CO 2	To acquire knowledge on Sources of History
				CO 3	To understand the importance of Allied Subjects of History
				CO 4	To apply lessons of History in real life.
				CO 5	To evaluate the Historical writing.
				CO 1	List the characteristic features of Indian heritage and culture

		U23PCH1	Professional Competency Skill	**CO 2**	Outline the key events of Indian history since 18th century
				CO 3	Describe the salient features of Indian Constitution.
				CO 4	Discuss the major environmental issues
				CO 5	Outline the role of women in contemporary society
		U23CE1	MicrOECONOMICS-I	**CO 1**	C1 To Equip the economic behaviours of individual units of the society.
				CO 2	C2 To describes the consumer behaviour and utility analysis
				CO 3	C3 To impart knowledge on demand and supply concepts
				CO 4	C4 To identify the relevance of Production and returns to scale of Production
				CO 5	C5 To know the costs and profit maximisation
		U23CE2	STATISTICS FOR ECONOMICS –I	**CO 1**	C1 To know the nature and scope of statistics and its applications
				CO 2	C2 To teach students Collection, Classification, Analyzing and Presentation of data.
				CO 3	C3 To apply the measures of central tendency
				CO 4	C4 To draw measurement of dispersion and its applications
				CO 5	C5 To analyse correlation and regression and its applications
		U23GE05	FUNDAMENTALS OF MANAGEMENT	**CO 1**	C1 To provide students with the basic concepts of Management.
				CO 2	C2 To probe the planning concepts and its objectives
				CO 3	C3 To analyze the Organizational Levels in an Organization
				CO 4	C4 To describes the motivation and satisfaction and its elements
				CO 5	C5 To know the importance of Quality Checks.

		U23GE06	INTRODUCTION TO SOCIOLOGY	**CO 1**	C1 To understand the nature and scope of sociology and its development
				CO 2	C2 To identify the origin and development of sociology and its basic concepts
				CO 3	C3 To evaluate stages and agencies of socialization
				CO 4	C4 To understand social stratification and its determinants
				CO 5	C5 To know the social change, evolution and revolution
		U23SEE1	DEMOGRAPHY	**CO 1**	C1 To understand the meaning and scope of demography
				CO 2	C2 To discuss the basic concepts of demographic measurements.
				CO 3	C3 To describes the concepts of urbanisation and migration
				CO 4	C4 To evaluate the international aspects of population growth and tis environment
				CO 5	C5 To analyse the trends in population policy in India
		U23FE1	BUSINESS COMMUNICATION	**CO 1**	C1 To know the meaning objectives and role of communication and media
				CO 2	C2 To understand the need and importance of communication in management
				CO 3	C3 To apply the need and function of business letter
				CO 4	C4 To study the business correspondents with insurance and other organisation
				CO 5	C5 To understand the meaning and importance of report writing
		U23CE3	MICROECONOMICS-II	**CO 1**	C1 To equip the students to gain knowledge on the market structures
				CO 2	C2 To analyse the monopoly and price discrimination in the market
				CO 3	C3 To probe the monopolistic and oligopoly competitions and its operation
				CO 4	C4To enrich the students about the Theories of Distribution

				CO 5	C5 To understand the concepts of Welfare Economics
		U23CE4	STATISTICS FOR ECONOMICS-II	**CO 1**	C1 To understand the various methods of index numbers and its applications
				CO 2	C2 To analyse the components and measurement of time series data
				CO 3	C3 To know the theories of probability and its applications
				CO 4	C4 To probe the research design and sampling methods
				CO 5	C5 To acquire knowledge on the application of test of Hypotheses in Research
		U23GE07	HISTORY OF ECONOMIC THOUGHT	**CO 1**	C1 To explain the nature and scope of economic thought and its principles
				CO 2	C2 To understand the classical economists ideology and theory of Marx
				CO 3	C3 To know the Kenesian revolution and its analysis
				CO 4	C4 To build the Marginalism Revolution and its operations
				CO 5	C5 To describes the thoughts of various Nobel laureates in economics
		U23GE08	INTRODUCTION TO E COMMERCE	**CO 1**	C1 To learn the nature and concepts of E-commerce in India
				CO 2	C2 To understand the various business models for E-Commerce and its uses
				CO 3	C3 To analyse the Various on line business transactions and its applications
				CO 4	C4 To explain the E-Promotion and consumer protection and its latest amendments
				CO 5	C5 To update the students on various methods of E-payment systems and tis risks.
		U23SEE2	ECONOMICS FOR INVESTORS	**CO 1**	C1 To understand concepts of saving and investments
				CO 2	C2 To probe the various investment avenue and its practice applications
				CO 3	C3 To enables various investment markers and its features

				CO 4	C4 To Know the economic fundamentals and the Business Environment
				CO 5	C5 To understand various investment methods and its strategies
		U23SEE3	COMPUTER APPLICATIONS IN ECONOMICS	**CO 1**	C1 To know the basic concepts of Computer Applications
				CO 2	C2 To apply the MS office and its basic operations
				CO 3	C3 To describes the data processing techniques using various MS office operations
				CO 4	C4 To gain knowledge on application of MS Excel
				CO 5	C5 To know mathematical and statistical functions for Economic Analysis
		U23CE5	MACRO ECONOMICS-I	**CO 1**	C1 To understand the national income and its related concepts
				CO 2	C2 To analyse the classical theory of full employment and its advantages
				CO 3	C3 To illustrate the Keynesian under employment theory and its applications
				CO 4	C4 To evaluate the theories of Consumption and its types
				CO 5	C5 To impart students to understand inflation and its types
		U23CE6	MATHEMATICS FOR ECONOMICS	**CO 1**	C1 To integrate the concepts of Economics with Mathematical tools.
				CO 2	C2 To use Matrices to find solutions in Economics.
				CO 3	C3To apply the applications of Matrix algebra and its uses
				CO 4	C4 To know the differentiation and its function
				CO 5	C5 To understand the second order derivatives and its maxi mini function
				CO 1	C1 To assess the nature and scope of marketing and its functions
				CO 2	C2 To understand the buying behavior and market segmentation with consumer protection act

		U23GE09	PRINCIPLES OF MARKETING	**CO 3**	C3 To know the product, pricing decisions and pricing of new products
				CO 4	C4 To reveals the distribution and promotions decisions its types and methods
				CO 5	C5 To analyse the marketing technique and marketing services
		U23GE10	ECONOMICS OF TOURISM	**CO 1**	C1 To familiarise students with the basic concepts of Tourism.
				CO 2	C2 To probe the tourism demand forecasting and its methods
				CO 3	C3 To analyse the impact of tourism and its related aspects
				CO 4	C4 To understand the contribution of the Tourism Industry
				CO 5	C5 To examine the various international organisations in Tourism.
		U23SEE4	ENTREPRENEURIAL ECONOMICS	**CO 1**	C1 To describes the factors influencing entrepreneurship
				CO 2	C2 To know the various theories of motivation and its advantages
				CO 3	C3 To Identify the opportunities to create value for others
				CO 4	C4 To evaluate the creativity and entrepreneurship.
				CO 5	C5 To analyse the sources of finance for business.
		U23SEE5	EVENT MANAGEMENT	**CO 1**	C1 To equip students on the various facets of Event Management.
				CO 2	C2 To provide students event management as a career option.
				CO 3	C3 To understand the committees in managing events and its safety
				CO 4	C4 To learn about celebrity management
				CO 5	C5 To know the event management in India and its operations
				CO 1	C1 To analyse the IS-LM model and its shifts

UECE	B.A ECONOMICS	U23CE7	MACRO ECONOMICS –II	**CO 2**	C2 To probe the macro economic variables and business cycle
				CO 3	C3 To trace the macroeconomic theories and analyze the macroeconomic policies.
				CO 4	C4 To understand the monetary policy and its instruments.
				CO 5	C5 To know the fiscal policy and its instruments.
		U23CE8	INDIAN ECONOMY	**CO 1**	C1 To understand the features and issues of Indian economy and new economic policy
				CO 2	C2 To analyse the national income, poverty and human development and its method
				CO 3	C3 To equip conceptual foundations and macroeconomic concepts of Indian Economy
				CO 4	C4 To describe the Trends in Production and Productivity in Agriculture
				CO 5	C5 To know the importance of Foreign Trade for a Developing Economy
		U23GE11	RESEARCH METHODS IN ECONOMICS	**CO 1**	C1 To understand the meaning and significance characteristics of scientific research
				CO 2	C2 To know the formulation, selection of research problem and collection of reviews
				CO 3	C3 To apply the various research design in the social science research
				CO 4	C4 To enumerate the data and sampling methods
				CO 5	C5 To discuss the report writing techniques and its procedures
		U23GE12	HEALTH ECONOMICS	**CO 1**	C1 To understand the importance of health sector in economic development
				CO 2	C2 To evaluate the components of demand and supply of health care
				CO 3	C3 To Understand the importance of Health Indicators.
				CO 4	C4 To evaluate the components of Demand of Healthcare.
				CO 5	C5 To examine the review the existing Health Infrastructure.

		U23SEE6	BASIC ACCOUNTANCY	**CO 1**	C1 To provide an understanding on the basic concepts in Financial Accounting
				CO 2	C2 To equipped with basic knowledge about Tally.
				CO 3	C3 To describe the Final Accounts and Balance Sheet Adjustment
				CO 4	C4 To understand the bank Reconciliation Statement and its uses
				CO 5	C5 To use the Tally Software and its applications
		U23SEE7	MODERN BANKING AND INSURANCE	**CO 1**	C1 To discern the modern banking and insurance course
				CO 2	C2 To enables the learners understand new financial instruments and banking practices
				CO 3	C3 To know the role of insurance in economic development
				CO 4	C4 To understand the insurance contract and risk management
				CO 5	C5 To know the Major Insurance Legislation in India and its growth
		U23CE9	MONETARY ECONOMICS	**CO 1**	C1 To understand the theories that governs and its application
				CO 2	C2 To explains working of the Monetary System and its uses
				CO 3	C3 To know the Role of Commercial Banks after Nationalisation and its operations
				CO 4	C4 To compare the monetarism and Keynesianism
				CO 5	C5 To identify the role of central banks and its operations
		U23CE10	FISCAL ECONOMICS	**CO 1**	C1 To enable students to acquire Knowledge on the various facets of Fiscal Economics.
				CO 2	C2 To illustrates various theories of fiscal economics and its applications
				CO 3	C3 To describes the budget process and features of a good tax system
				CO 4	C4 To analyse the trends in public expenditure and debt management

				CO 5	C5 To evaluate the Budget of the Government of India, central and state relation
		U23CE11	INDUSTRIAL ECONOMICS	**CO 1**	C1 To discuss the Features, Performance and development issues of the Indian Economy
				CO 2	C2 To analyse the various theories of Industrial Location.
				CO 3	C3 To know the licensing policies and industrial sickness
				CO 4	C4 To describe the growth Patterns in Indian Industrial Sector.
				CO 5	C5 To observe the trends and prospects of industrial growth in India
		U23CE12	ENVIRONMENTAL ECONOMICS	**CO 1**	C1 To understand the theoretical basis of Environmental Economics
				CO 2	C2 To choose the relevant economic tools to improve Environmental Quality
				CO 3	C3 To describe the Environment as a Public Good and market failure theories
				CO 4	C4 To doctrine the various methods of environmental valuation and its uses
				CO 5	C5 To know the regulation of Pollution through Economic Instruments
		U23DE01	TAMIL NADU ECONOMY	**CO 1**	C1 To discuss the Features, Performance and development issues of Tamil Nadu Economy
				CO 2	C2 To analyse the agricultural and industrial scenario in Tamil Nadu
				CO 3	C3 To understand the industrial scenario in tamilnadu and its growth
				CO 4	C4 To know the general performance of the tamilnadu
				CO 5	C5 To describe the state finances and its development initiatives
		U23DE02	MANAGERIAL ECONOMICS	**CO 1**	C1 To develop analytical and problem-solving skills among the students.
				CO 2	C2 To enable students to Capital Budgeting and its concepts.
				CO 3	C3 To understand the cost controls measures and its uses

				CO 4	C4 To know the Demand for Durable and Non-Durable Products
				CO 5	C5 To familiarize students of Pricing Policies and its Practices.
		U23DE03	OPERATIONS RESEARCH	**CO 1**	C1 To enable students to understand the rational decision making in practice
				CO 2	C2 To understand use of key concepts such as Linear Programming and its applications,.
				CO 3	C3 To probe the Transportation Assignment CPM,PERT and Queuing
				CO 4	C4 To provide understanding about making Rational Decisions in Practice.
				CO 5	C5 To provide knowledge on acquiring Entrepreneurial Skills.
		U23DE04	GENDER ECONOMICS	**CO 1**	C1 Students will be able to sensitize on issues that is related to gender
				CO 2	C2 To understand the conceptual clarification of women and work
				CO 3	C3 To analyse the Women in Organized and Unorganized Sectors in an Economy
				CO 4	C4 Identify the marginalization of women in economic theory and in the economy
				CO 5	C5 Incorporate gender in mainstream policy making
		U23CE13	INTERNATIONAL ECONOMICS	**CO 1**	C1 To evaluate critical overview of International Trade theories
				CO 2	C2 To understand the Foreign Exchange Market and its operations
				CO 3	C3 To know the BOP disequilibrium and International Trade Policy.
				CO 4	C4 To impart knowledge on Foreign Exchange Market and its concepts
				CO 5	C5 To familiarize students on Trade Policies
				CO 1	C1 To focuses on themes that cut across core values in development economics
				CO 2	C2 To describes the various approaches and theories of development.

		U23CE14	DEVELOPMENT ECONOMICS	**CO 3**	C3 To analyze the significance of Development Models in Economic Planning
				CO 4	C4To enable the students to know about Development and Growth Models.
				CO 5	C5 To probe the role of Financial System in Economic Development
		U23CE15	**AGRICULTURAL ECONOMICS**	**CO 1**	C1 To probe into the various issues in agricultural Labour
				CO 2	C2 To understand the marketing, Finance and Price Policy of Agriculture
				CO 3	C3 To study the impact of Agriculture on Indian Economic Scenario.
				CO 4	C4 To assess the Sustainable agriculture Development In india
				CO 5	C5 To familiarize students about the significance of Sustainable Agriculture.
		U23DE05	BASIC ECONOMETRICS	**CO 1**	C1 To analyse the Economic Relationship mathematically.
				CO 2	C2 To estimate testing hypotheses, forecasting which helps in Policy Decision Making
				CO 3	C3 To understand the application of economic theories in real time situations
				CO 4	C4 To evaluate the Violation of Assumptions in econometric applications
				CO 5	C5 To understand and analyze various Econometric Models and its application.
		U23DE06	BEHAVIOURAL ECONOMICS	**CO 1**	C1 To provide an overview of how Behavioural Principles in economics
				CO 2	C2 To apply behavioural approaches to economic Problems
				CO 3	C3 To know the Nature and Components of mental accounting
				CO 4	C4 To impart knowledge on how people's behaviour influence Decision Making.
				CO 5	C5 To analyze the Behavioural Economic Models.
				CO 1	C1 To provides a comprehensive functions and operations of financial markets

		U23DE07	FINANCIAL MARKETS AND INSTITUTIONS	**CO 2**	C2 To understand the various financial institutions and its operations in India
				CO 3	C3 To probe the role of banks in the financial operations and its regulations
				CO 4	C4 To analyse the Financial Institutions in India and its influence on Indian Economy.
				CO 5	C5 To impart knowledge on Exchange Markets and its aspects.
		U23DE08	URBAN ECONOMICS	**CO 1**	C1 To know the role of Urban Economics and its growth structure
				CO 2	C2 To understand the basic economic principles in Urban Economics.
				CO 3	C3 To describes the various urban infrastructures and its functions
				CO 4	C4 To provide understanding about urbanization and its aspects.
				CO 5	C5 To familiarize the students about migration and its relevance in urban development.
		U23PE1	GENERAL STUDIES FOR COMPETITIVE EXAMINATIONS	**CO 1**	C1 To create the opportunity for learning across different disciplines
				CO 2	C2 To build experiences for students as they grow into lifelong learners.
				CO 3	C3 To know the world climatic classification and its features
				CO 4	C4 To build experiences for students as they grow into lifelong learners.
				CO 5	C5 To know the history of modern India
		U23SIE1	INTERNSHIP/INDUSTRIAL TRAINING	**CO 1**	C1 Gain knowledge about the needed skills which were provided by the field
				CO 2	C2 Identify how to apply theoritical ideas in practical issues
				CO 3	C3 Understand and slove the practical challenges
				CO 4	C4Acquire essential skills which were trained by the organisation
				CO 5	C5 Maintain the harmonial relationship betweet the labour and management.

		U23GE13	GENERAL ECONOMICS	**CO 1**	C1 Enable the students to know the economics,Factors of Production and Consumer Surplus
				CO 2	C2 Analyse the concept of Poverty and its Eradication Programme and Reasons for Unemployment
				CO 3	C3 Evaluate the Measuring National Income and analyse the functions of Money Measures to control Inflation
				CO 4	C4 Understand the different structure of Market and Measures to control Inflation
				CO 5	C5 Remembering of Public Finance and its components of Public Finance
		U23GE14	BANKING THEORY PRACTICE AND INSURANCE	**CO 1**	C1 Trace the role of banks in a Developing Economy.
				CO 2	C2 Define the terms banker and customer and their relationship.
				CO 3	C3 Explain the methods of credit control
				CO 4	C4 Understand the different structure of Market and Measures to control Inflation
				CO 5	C5 Sketch the functions of IRDA
		U23CA1	Financial Accounting I	CO1	Remember the concept of rectification of errors and Bank reconciliation statements
				CO2	Apply the knowledge in preparing detailed accounts of sole trading concerns
				CO3	Analyse the various methods of providing depreciation
				CO4	Evaluate the methods of calculation of profit
				CO5	Determine the royalty accounting treatment and claims from insurance companies in case of loss of stock
		U23CA2	Principles of Management	CO1	Demonstrate the importance of principles of management.
				CO2	Paraphrase the importance of planning and decision making in an organization.
				CO3	Comprehend the concept of various authorities and responsibilities of an organization
				CO4	Enumerate the various methods of Performance appraisal

				CO5	Demonstrate the notion of directing, co-coordination and control in the management.
		U23GA41	i) Business Communication	CO1	Acquire the basic concept of business communication.
				CO2	Exposed to effective business letter
				CO3	Paraphrase the concept of various correspondences.
				CO4	Prepare Secretarial Correspondence like agenda, minutes and various business reports.
				CO5	Acquire the skill of preparing an effective resume
		U23GA42	ii) Indian Economic Development	CO1	Elaborate the role of State and Market in Economic Development
				CO2	Explain the Sectoral contribution to National Income
				CO3	Illustrate and Compare National Income at constant and current prices.
				CO4	Describe the canons of public expenditure
				CO5	Understand the theories of money and supply
		U23GA43	iii) Business Economics	CO1	Explain the positive and negative approaches in economic analysis
				CO2	Understood the factors of demand forecasting
				CO3	Know the assumptions and significance of indifference curve
				CO4	Outline the internal and external economies of scale
				CO5	Relate and apply the various methods of pricing
		U23SEA1	Personality Development	CO1	Develop Personality Skills.
				CO2	Ability to present oneself with good attitude.
				CO3	Build Self-confidence, overcome self-doubt

				CO4	Understanding the importance of interpersonal relationships
				CO5	Develop and maintain good manners
		U23FA1	Fundamentals of Commerce	CO1	Understand the concepts of Business
				CO2	Familiarise with types of organisation
				CO3	Develop the skill to do banking transactions
				CO4	Gain knowledge about insurance
				CO5	Apply the statistical tools and calculate interest
		U23CA3	Financial Accounting II	CO1	To evaluate the Hire purchase accounts and Instalment systems
				CO2	To prepare Branch accounts and Departmental Accounts
				CO3	To understand the accounting treatment for admission and retirement in partnership
				CO4	To know Settlement of accounts at the time of dissolution of a firm.
				CO5	To elaborate the role of IFRS
		U23CA4	Business Law	CO1	Explain the Objectives and significance of Mercantile law
				CO2	Understand the clauses and exceptions of Indian Contract Act.
				CO3	Outline the contract of indemnity and guarantee
				CO4	Familiar with the provision relating to Bailment and Pledge
				CO5	Explain the various provisions of Sale of Goods Act 1930
				CO1	Remember the nexus between environment and business.
				CO2	Apply the knowledge of the Political Environment in which the businesses operate.

		U23GA44	i) Business Environment	CO3	Analyze the various aspects of Social and Cultural Environment.
				CO4	Evaluate the parameters in the Economic Environment.
				CO5	Create a conducive Technological Environment for business to operate globally.
		U23GA45	ii) Insurance and Risk Management	CO1	Identify the workings of insurance and hedging
				CO2	Evaluate the types of insurance policies and settlement
				CO3	Settle claims under various types of general insurance
				CO4	Know the protection provided for insurance policy holders under IRDA
				CO5	Evaluate the assessment and retention of risk
		U23GA46	iii) International Trade	CO1	Distinguish between the concept of internal and international trade.
				CO2	Define the various theories of international trade.
				CO3	Examine the balance of trade and exchange rates
				CO4	Appraise the role of IMF and IBRD.
				CO5	Define the workings of WTO and with special reference to India.
		U23SEA2	Principles of Co-operation	CO1	Students will learn about the basics of cooperation
				CO2	Clarity in the principles of cooperation
				CO3	Understand the different forms of business organisation
				CO4	Develop knowledge about the forms of Economic system
				CO5	Understanding the concepts of credit structure
				CO1	Improve skills in the basics of banking

		U23SEA3	Digital Banking	CO2	Work in Online Banking
				CO3	Learn the applications of Banking Transactions
				CO4	Understand the security skills
				CO5	Apply the Concepts of Digital Signature
		U23CA5	Corporate Accounting I	CO1	Prepare and account for various entries to be passed in case of issue, forfeiture and reissue of shares and compute the liability of underwrites
				CO2	Asses the accounting treatment of issue and redemption of preference shares and debentures
				CO3	Construct Financial Statements applying relevant accounting treatments
				CO4	Compute the value of goodwill and shares under different methods and assess it's applicability
				CO5	Integrate theoretical knowledge on all accounting in par with IFRS and IND AS
		U23CA6	Company Law	CO1	Understand the classification of companies under the act
				CO2	Examine the contents of the Memorandum of Association & Articles of Association
				CO3	Know the qualification and disqualification of Auditors
				CO4	Understand the workings of National Company Law Appellate Tribunal (NCLAT)
				CO5	Analyse the modes of winding up
		U23GA47	i) Business Legislation	CO1	Acquire knowledge on Factories Act, 1948
				CO2	Analyse the role of Foreign Exchange Management Act, 1999
				CO3	Understand the practical implications of Prevention of Money Laundering Act, 2002
				CO4	Evaluate the importance of Competition Act, 2002
				CO5	Gain knowledge on Intelligence Property Rights

		U23GA48	ii) Business Mathematics and Statistics	CO1	Learn the basics of ratio, proportion, indices and logarithm
				CO2	Familiarise with calculations of simple and compound interest and arithmetic, geometric and harmonic progressions.
				CO3	Determine the various measures of central tendency
				CO4	Calculate the correlation and regression coefficient.
				CO5	Assess problems on time series analysis
		U23GA49	iii) E-Commerce	CO1	Understand the role and features of world wide web
				CO2	Understand the Benefits and model of e-tailing
				CO3	Use the web enabled services
				CO4	Tackle the threats in internet security system
				CO5	Know about the Ethical principles Privacy and Information Rights
		U23SEA4	Entrepreneurial Skill - Commerce Practical	CO1	Fill up all the forms in Banking Sector in an efficient way.
				CO2	Developed Skill in filling up of all the forms in Insurance Sector.
				CO3	Gained Knowledge in filling up of all the forms in Postal department.
				CO4	Understood the procedure of filling up of forms in Government Offices.
				CO5	Learned the procedure to apply for PAN Card through Online.
				CO1	Understand the Scope of Business and Profession.

UCOE	**B.Com**	U23SEA5	Business Organisation	CO2	Explain the establishment of business unit.
				CO3	Analyse the different forms of organisation.
				CO4	Evaluate the various types and forms of merger.
				CO5	Examine the types of Organisation.
		U23CA7	Corporate Accounting II	CO1	Understand the accounting treatment of amalgamation, Internal and external reconstruction
				CO2	Construct Profit and Loss account and Balance Sheet of Banking Companies in accordance in the prescribed format.
				CO3	Synthesize and prepare final accounts of Insurance companies in the prescribed format
				CO4	Give the consolidated accounts of holding companies
				CO5	Preparation of liquidator's final statement of account
		U23CA8	Principles of Marketing	CO1	Develop an understanding on the role and importance of marketing
				CO2	Apply the 4p's of marketing in their venture
				CO3	Identify The Factors Determining Pricing
				CO4	Use the different Channels of distribution of industrial goods
				CO5	Understand the concept of-marketing and E-Tailing
		U23GA50	i) Financial Services	CO1	Summarise the role and function of the financial system
				CO2	Gain practical knowledge on key areas relating to management of financial products and services
				CO3	Familiarize students about Venture Capital, Leasing.
				CO4	Infer the importance of the Credit Rating system.
				CO5	Understand various types of Mutual funds schemes and the roles of NSDL and CSDL.

		U23GA51	ii) Consumerism & Consumer Protection	CO1	Remember and recall aspects in consumerism
				CO2	Identify the reasons for consumer exploitation
				CO3	Discover the rights and duties of a consumer
				CO4	Create an environment which protects the consumers in India
				CO5	Critically appraise the consumer Protection Act
		U23GA52	iii)Operations Research	CO1	Frame a linear programming problem for quantitative decisions in business planning.
				CO2	Optimise economic factors by applying transportation and assignment problems.
				CO3	Apply the concept of game theory and simulation for optimal decision making.
				CO4	Analyse and manage inventories to meet the changes in market demand.
				CO5	Construct networks including PERT, CPM for strategic management of business projects
		U23SEA6	Consumer Behaviour	CO1	Understand the basic Concepts in Consumer Behaviour
				CO2	Learn the factors affecting Consumer Behaviour
				CO3	Able to make Decision relating to Problems in Post purchase, etc.,
				CO4	Know about the Motivating factors.
				CO5	Familiarise with the Communication process
		U23SEA7	Economic Analysis	CO1	Explain the positive and negative approaches in economic analysis
				CO2	Understood the factors of demand forecasting
				CO3	Know the assumptions and significance of indifference curve

				CO4	Outline the internal and external economies of scale
				CO5	Relate and apply the various methods of pricing
		U23CA9	Cost Accounting I	CO1	Remember and recall the various concepts of cost accounting
				CO2	Demonstrate the preparation and reconciliation of cost sheet.
				CO3	Analyse the various valuation methods of issue of materials.
				CO4	Examine the different methods of calculating labour cost.
				CO5	Critically evaluate the apportionment of Overheads.
		U23CA10	Banking Law and Practice	CO1	Aware of various provision of Banking Regulation Act 1949 applicable to banking companies including cooperative banks
				CO2	Analyse the evolution of Central Banking concept and prevalent Central Banking system in India and their roles and function
				CO3	Gain knowledge about the Central Bank in India, its formation, nationalizing its organization structure, role of bank to government, role in promoting agriculture and industry, role in financial inclusion
				CO4	Evaluate the role of capital fund of commercial banks, objectives and process of Asset securitization ect
				CO5	Define the practical banking systems relationship of bankers and customers, crossing of cheques, endorsement etc.
		U23CA11	Income Tax Law and Practice I	CO1	Demonstrate the understanding of the basic concepts and definitions under the Income Tax Act
				CO2	Assess the residential status of an assessee & the incidence of tax.
				CO3	Compute income of an individual under the head salaries.
				CO4	Ability to compute income from house property.
				CO5	Evaluate income from a business carried on or from the practice of a Profession.
				CO1	Define auditing and its process
				CO2	Compare and contrast the essence of internal check and internal control

		U23CA12	Auditing and Corporate Governance	CO3	Identify the role of auditors in company
				CO4	Define the concept of Corporate Governance
				CO5	Appraise the implications of Corporate Social Responsibility
		U23DA01	i) Financial Management	CO1	Recall the concepts in financial management.
				CO2	Apply the various capital structure theories.
				CO3	Apply capital budgeting techniques to evaluate investment proposals.
				CO4	Determine dividend pay-outs.
				CO5	Estimate the working capital of an organization.
		U23DA02	ii) Indirect Taxation	CO1	Acquaintance with Indirect tax laws
				CO2	Exposed to the overview of GST.
				CO3	Apply provisions of CGST and IGST
				CO4	Summarise procedures of GST
				CO5	Discuss aspects of Customs Duty in India
		U23DA03	i) Human Resource Management	CO1	Examine the role of HRM in the new ageorganisation and plan man power requirements andimplement techniques of job design.
				CO2	Formulate action plans for employee Recruitment and Selection.
				CO3	Choose appropriate methods of Training
				CO4	Estimate, defend and handle legal compliance inHRM involving trade union disputes and employeeretention.
				CO5	Formulate strategies for employee welfare.
				CO1	Familiarised with modern office management

		U23DA04	ii) Office Management and Secretarial Practice	CO2	Adapt with the modern work atmosphere
				CO3	Trained in maintaining the office independently and effectively
				CO4	Ability to organize data records in office
				CO5	Motivated to act as a company secretary
		U23CA13	Cost Accounting - II	CO1	Remember and recall standards in cost accounting
				CO2	Apply the knowledge in contract costing
				CO3	Analyze and assimilate concepts in process costing
				CO4	Understand various bases of classification cost and prepare operating cost statement.
				CO5	Set up standards and analyse variances.
		U23CA14	Management Accounting	CO1	Remember and recall basics in management accounting
				CO2	Apply the knowledge of preparation of Financial Statements
				CO3	Analyse the concepts relating to fund flow and cash flow
				CO4	Evaluate techniques of budgetary control
				CO5	Formulate criteria for decision making using principles of marginal costing.
		U23CA15	Income Tax Law and Practice II	CO1	Remember and recall provisions on capital gains
				CO2	Apply the knowledge about income from other sources
				CO3	Analyse the set off and carry forward of losses provisions
				CO4	Learn about assessment of individuals
				CO5	Apply procedures learnt about assessment procedures.

		U23DA05	Entrepreneurial Development	CO1	Identify the various traits of an entrepreneur
				CO2	Turn ideas into business opportunities
				CO3	Do feasibility study before starting a project
				CO4	Identify the sources of funds for funding a project
				CO5	Develop an understanding about the Government schemes available for women entrepreneurs
		U23DA06	Computer Application in Business	CO1	Recall various techniques of working in MS-WORD.
				CO2	Prepare appropriate business document.
				CO3	Create - Presentation for Seminars and Lectures.
				CO4	Understanding various tools used in MS-EXCEL.
				CO5	Apply Excel tools in various business areas of Finance, HR, Statistics.
		U23DA07	Logistics and Supply Chain Management	CO1	Examine the importance of Customer Service in Logistics Management
				CO2	Develop an understanding on the Distribution Channel Management
				CO3	Interpret the Global applications of supply chain management
				CO4	Understand the Inter Relation between Enablers and Levels of Supply Chain Improvement
				CO5	Identify the conflict resolution strategies
		U23DA08	SPREADSHEET FOR BUSINESS	CO1	Develop And Apply Fundamental Spread Sheet Skills.
				CO2	Understanding Various Tools Used In Ms-Excel.
				CO3	Knowledge On Various Statistical Tests in Ms-Excel.
				CO4	Demonstrate Proficiency in Using Complex Spread Sheet Tools Such as Formulas and Functions.

				CO5	Develop Trending Application Using MS-Excel
		U23PCA1	General Awareness For Competitive Examination	CO1	Develop board knowledge of the different components in polity
				CO2	Understand the Geographical features across countries and in India
				CO3	Acquire knowledge on the aspects of Indian Economy
				CO4	Understand the significance of India's Freedom Struggle
				CO5	Gain knowledge on Ecology and Environment
		U23CK1	Principles of Management	CLO1	Describe nature, scope, role, levels, functions and approaches of management
				CLO2	Apply planning and decision making in management
				CLO3	Identify organization structure and various organizing techniques
				CLO4	Understand Direction, Co-ordination & Control mechanisms
				CLO5	Relate and infer ethical practices of organisation.
		U23CK2	Accounting for Managers I	CLO1	Prepare Journal, ledger, trial balance and cash book
				CLO2	Classify errors and making rectification entries
				CLO3	Prepare final accounts with adjustments
				CLO4	To understand Hire Purchase system
				CLO5	To familiarize students with concepts of managerial economics and its relevant concepts of economics in current business scenario
		U23GK53	Managerial Economics	CLO1	To understand the applications & implications of economics and its knowledge of the mechanics of supply and demand markets in decision-making and problem solving.
				CLO2	To Understand the optimal point of cost analysis and production factors of the firm
				CLO3	To describe the pricing methods and strategies that are consistent with evolving marketing needs

				CLO4	
				CLO5	To Provide insights to the various market structures in an economy.
		U23SEK1	Skill Enhancement course - Basics of Event Management	CLO1	To know the basic of event management its concepts
				CLO2	To make an event design
				CLO3	To make feasibility analysis for event.
				CLO4	To understand the 5 Ps of Event Marketing
				CLO5	To know the financial aspects of event management and its promotion
		U23FK1	Foundation Course - Managerial Communication	CLO1	To educate students role & importance of communication skills
				CLO2	To build their listening, reading, writing & speaking communication skills.
				CLO3	To introduce the modern communication for managers.
				CLO4	To understand the skills required for facing interview
				CLO5	To facilitate the students to understand the concept of Communication.
		U23CK3	Marketing Management	CLO1	To list and identify the core concepts of Marketing and its mix.
				CLO2	To sketch the market segmentation, nature of product, PLC
				CLO3	To analyze the appropriate pricing methods
				CLO4	To determine the importance of various media
				CLO5	To assess the sales force and applications of digital marketing
				CLO1	Interpret cost sheet & write comments.
				CLO2	Compare cost, management & financial accounting

		U23CK4	Accounting for Managers II	CLO3	Analyze the various ratio and compare it with standards to assess deviations
				CLO4	Estimate budget and use budgetary control
				CLO5	Evaluate marginal costing and its components
		U23GK54	International Business	CLO1	Discuss the modes of entry to International Business
				CLO2	Explain international trade theories
				CLO3	Understand Foreign exchange market and FDI
				CLO4	Outline the Global Business Environment
				CLO5	Identify the relevance of international institutions and trading blocs.
		U23SEK2	Skill Enhancement course - Managerial Skill Development	CLO1	To improve the self-confidence, groom the personality and build emotional competence
				CLO2	To address self-awareness and the assessment of core management skills such as communication, working with teams and creating a positive environment for change.
				CLO3	To assess the Emotional intelligence
				CLO4	To induce critical-thinking and analytical skills to investigate complex problems to propose viable solutions
				CLO5	To improve professional etiquettes
		U23SEK3	Business Etiquette and Corporate Grooming	CLO1	To impart knowledge about basic etiquettes in professional conduct
				CLO2	To provide understanding about the workplace courtesy and ethical issues involved
				CLO3	To suggest on guidelines in managing rude and impatient clients
				CLO4	To familiarize students about significance of cultural sensitivity and the relative business attire
				CLO5	To stress on the importance of attire
				CLO1	To define Organizational Behavior, Understand the opportunity through OB.

		U23CK5	Organisational Behaviour	CLO2	To apply self-awareness, motivation, leadership and learning theories at workplace.
				CLO3	To analyze the complexities and solutions of group behavior.
				CLO4	To impact and bring positive change in the culture of the organization.
				CLO5	To create a congenial climate in the organization.
		U23CK6	Financial Management	CLO1	Understand the basics of finance and roles of finance manager
				CLO2	Evaluate Capital structure & Cost of capital
				CLO3	Evaluate Capital budgeting
				CLO4	Assessing dividends
				CLO5	Appraise Working Capital
		U23GK55	Business Statistics	CLO1	Measures of Central Tendency
				CLO2	Measures of Variation
				CLO3	Analyze of Time Series
				CLO4	Understand Index Numbers
				CLO5	Test Hypothesis
		U23SEK4	New Venture Development	CLO1	To learn to generate and evaluate new business ideas
				CLO2	To learn about a business model that generates money
				CLO3	To understand how to find, evaluate and buy a business
				CLO4	To evaluate the feasibility of idea into a Venture
				CLO5	To understand sources who lend for new ventures

		U23SEK5	Computer Applications in Business	CLO1	To build skills in Ms-Word
				CLO2	To build skills in Ms-Excel,
				CLO3	To build skills in Ms- Power Point
				CLO4	To understand the basics of tally
				CLO5	To familiarize students with google forms for students with relevance in business scenario and its applications.
		U23CK7	Business Environment	CLO1	To understand the concepts of Business Environment.
				CLO2	To apply knowledge in the business and strategic decisions.
				CLO3	To analyze the importance of business in various social groups.
				CLO4	To evaluate the types of economic environment and its impact on business.
				CLO5	To construct and assess the environment for real time business
		U23CK8	Business Regulatory Frame Work	CLO1	Explain Indian Contracts Act
				CLO2	Understand Sales of goods act and Contract of Agency
				CLO3	Understand Indian Companies Act 1956
				CLO4	Understand Consumer Protection Act – RTI
				CLO5	Understand Cyber law
		U23GK56	Operations Research	CLO1	Analyse Linear Programming
				CLO2	Analyze Transportation problem
				CLO3	Analyze Assignment problem
				CLO4	Analyze Network models

				CLO5	Analyze Game Theory and Decision Theory
		U23SEK6	Tally	CLO1	To impart knowledge about basic use of Tally and its functions
				CLO2	To understand the creation of groups and Ledgers
				CLO3	To provide understanding about Data Management in Tally
				CLO4	To understand the process of GST, EPF etc.
				CLO5	To familiarize students about significance of Tally in implications in the Organizations
	BBA	U23SEK7	Intellectual Property Rights	CLO1	To learn aspects of Intellectual property Rights to students who are going to play a major role in development and management of innovative projects in industries.
				CLO2	To disseminate knowledge on patents, patentregime in India and abroad and registration aspects
				CLO3	To evaluate the copyright law
				CLO4	To disseminate knowledge on copyrights and its related rights and registration aspects
				CLO5	To understand about Geographical Indicators
		U23CK9	Human Resource Management	CLO1	Explain the concepts, functions and process of HRM
				CLO2	Examine the selection and placement process
				CLO3	Evaluate the training and performance appraisal
				CLO4	Understand the employee engagement and compensation
				CLO5	Understand the recent trends in HR
		U23CK10	Research Methodology	CLO1	Understand the concepts and principles of Research
				CLO2	Comprehend and decide the usage of design and formulate hypothesis
				CLO3	Analyze data collection sources and tools

				CLO4	Summarize and establish solutions through data analysis
				CLO5	Compare and justify the process of writing and organizing a research report.
		U23CK11	Business Taxation	CLO1	To define and understand the basic concepts of tax.
				CLO2	To Examine and apply GST rules in real-time business situations.
				CLO3	To analyze the elements of GST mechanism in India.
				CLO4	To evaluate the rules of Income Tax and methods of valuation for customs.
				CLO5	To prepare the needed documents under GST Compliance.
		U23CK12	Management Information System	CLO1	Understand MIS in decision making
				CLO2	Explain MIS, its structure and role in management functions
				CLO3	Classify & discuss information system categories, Database Management systems
				CLO4	Discuss SDLC and functional information system categories
				CLO5	Outline functions of BPO, Data mining and the recent trends in information management
		U23SIK1	Summer Internship/IndustryTraining	CLO1	Students will apply theoretical concepts to real-world industrial practices, enhancing critical thinking and problem-solving skills.
				CLO2	Students will gain expertise in collecting, analyzing, and interpreting industry data to understand organizational dynamics
				CLO3	Students will develop collaboration and adaptability skills by working individually or in teams within professional environments.
				CLO4	Students will refine their professional communication and technical writing skills through structured reporting of their training experiences.
				CLO5	Students will acquire a comprehensive understanding of industry operations, market trends, and organizational structures to prepare for professional roles.
				CLO1	To understand the concepts of Entrepreneurship development.
				CLO2	To apply knowledge in the business plans and implementation.

		U23CK13	Entrepreneurial Development	CLO3	To analyze the various analyses of business in setting up of enterprises.
				CLO4	To create the awareness about various schemes and subsidies of government for entrepreneurial development.
				CLO5	To evaluate and assess the various problems and remedies of entrepreneurship
		U23CK14	Services Marketing	CLO1	To define and understand the concepts of Services Marketing.
				CLO2	To Examine and apply Marketing Mix in Service Marketing.
				CLO3	To analyze and design various strategies in the field of Services Marketing.
				CLO4	To evaluate the role of delivering Quality Service.
				CLO5	To design the tools of Marketing
		U23CK15	Production and Materials Management	CLO1	Provide comprehensive outlook on basic concepts, and practices of production
				CLO2	Identify right plant location and plant layout of factory
				CLO3	Know work study & method study, its procedure & quality control techniques in production.
				CLO4	Outline inventory control concepts and its replenishment to manage inventory
				CLO5	Discuss purchase management procedure and identify vendor rating mechanisms
		U23PCK1	Professional Competency Skill - Quantitative Aptitude I And Quantitative Aptitude II	CLO1	To categorize, apply and use thought process to distinguish between concepts of Quantitative methods.
				CLO2	To prepare and explain the fundamentals related to various possibilities and probabilities related to time
				CLO3	To be able to solve questions relating to percentages, Profit and loss
				CLO4	To analyze data in Charts
				CLO5	To understand the application Geometry and mensuration
				CLO1	Discuss digital marketing and its framework

		U23DK1A	Digital Marketing	CLO2	Identify, use appropriately and explain digital marketing tools
				CLO3	Explain social media marketing and crowdsourcing
				CLO4	Discuss online reputation management and its influence
				CLO5	Identify the various data analytics and measurement tools in digital marketing
		U23DK1B	Industrial Relations	CLO1	Understand the role and importance of Industrial Relations
				CLO2	Understanding the concepts of industrial Disputes and settlement.
				CLO3	Understanding the concepts of Labour legislation.
				CLO4	Identifying the concepts of Workers Participation in Management
				CLO5	Understanding the concepts of Trade Union
		U23DK1C	Financial Services	CLO1	List types of financial services and their role
				CLO2	Recognize role and functions of merchant banker and capital market
				CLO3	Compare and contrast factoring, leasing, hire purchase and consumer Finance
				CLO4	Understand Consumer Finance, Venture capital and credit rating
				CLO5	Understand mutual funds and its functions
		U23DKPW	Project with Viva Voce	CLO1	To Give Idea about Research Project
				CLO2	To identify the research problem
				CLO3	To review Literature
				CLO4	To give knowledge on Data Collection and Analysis
				CLO5	To Learn Project Preparation

		U23DK3A	Consumer Behavior	CLO1	Understand the different concepts relating to nature, scope and application of consumer behavior
				CLO2	Understand the various internal influences on consumer behavior
				CLO3	Comprehend the various psychological factors that shape the behavior and actions of the consumer in the global market.
				CLO4	Learn about the various external influences on consumer behavior
				CLO5	Understand the process of human decision making in a marketing context.
		U23DK3B	Innovation Management	CLO1	To have a broad understanding on the concept innovation management.
				CLO2	To familiarize the students about the creativity and innovation in product development.
				CLO3	To have a broad understanding of the innovation strategy and its competitive advantage.
				CLO4	To provide the knowledge about the technical innovation and its need and importance.
				CLO5	To understand the business strategy and objectives in current scenario.
		U23DK3C	Security Analysis & Portfolio Management	CLO1	Understand the basic concepts and terminologies relating to stock market
				CLO2	Evaluate the value of different equity and debt instruments
				CLO3	
				CLO4	Comprehend the different methods of performing fundamental and technical analysis
				CLO5	Evaluate portfolio based on different portfolio theories
		U23DK4A	Fundamentals of logistics	CLO1	Understand the various basic concepts and terms relating to Logistics
				CLO2	Comprehend the importance of customer service and outsourcing relevant to logistics
				CLO3	Evaluate the importance and issues in global logistics
				CLO4	Possess an overall knowledge about the services and factors allied to logistics

				CLO5	Understand the technological impact of logistics
		U23DK4B	E – Business	CLO1	To understand the basic concepts of electronic business.
				CLO2	To identify web-based tools.
				CLO3	To examine the security threats to e-business.
				CLO4	To discuss the strategies on marketing.
				CLO5	To analyze the business plan for e-business.
		U23DK4C	Strategic Management	CLO1	To understand the concept of strategy and strategic management process.
				CLO2	To create awareness of evolving business environment.
				CLO3	To understand strategic alternatives and make appropriate strategic choice
				CLO4	To know the basics of strategic implementation
				CLO5	To understand recent trends for competitive advantage
		U23CM1	Algebra & Trigonometry	CO1. Classify and Solve reciprocal equations	
				CO2. Find the sum of binomial, exponential and logarithmic series.	
				CO3. Find Eigen values, eigen vectors, verify Cayley – Hamilton theorem and diagonalize a given matrix	
				CO4. Expand the powers and multiples of trigonometric functions in terms of sine and cosine	
				CO5. Determine relationship between circular and hyperbolic functions and thesummation of trigonometric series	
		U23CM2	Differential Calculus	CO1. Find the nth derivative, form equations involving derivatives and apply Leibnitz formula	
				CO2. Find the partial derivative and total derivative coefficient	
				CO3. Determine maxima and minima of functions of two variables and to use the Lagrange's method of undetermined multipliers	

				CO4. Find the envelope of a given family of curves
				CO5. Find the evolutes and involutes and to find the radius of curvature using polar co-ordinates
		U23GM01	Programming in C	CO1. Remember the program structure of C with its syntax and semantics
				CO2. Understand the programming principles in C (data types, operators, branchingand looping, arrays, functions, structures, pointers and files)
				CO3 Apply the programming principles learnt in real-time problems
				CO4. Analyze the various methods of solving a problem and choose the best method
				CO5. Code, debug and test the programs with appropriate test cases
		U23GM02P	Programming in C and C++ Practicals	CO1. To illustrate input ,output operations ,symbolic constants,Library functions,various operators, arithmetical expressions.
				CO2.To illustrate concepts of IF…ELSE,GOTO,Switch…case,Loop,While Loop and DO…While Loop
				CO3 . To understand one,two dimensional arrays,string handling functions,tokens.
				CO4. To understand the concepts of control structures,functions.
				CO5. To understand the concepts constructors ,destructors,single and multiple inheriance and nesting of classes.
		U23SEM1	ICT - Tools	CO1. Create a classroom and assign test
				CO2. Develop a whiteboard and animate a document for presentation
				CO3. Draw a 2D and 3D graphs
				CO4. Assess and collect instant results during question session
				CO5. Create a quiz with rubrics and time restrictions
				CO1. Prove the binomial theorem and apply it to find the expansions of any (x + y)n and also, solve the related problems
				CO2. Find the various sequences and series and solve the problems related to them. Explain the principle of counting.

		U23FM1	Foundation Course	CO3. Find the number of permutations and combinations in different cases. Apply the principle of counting to solve the problems on permutations and combinations
				CO4. Explain various trigonometric ratios and find them for different angles, including sum of the angles, multiple and sub multiple angles, etc. Also, they can solve the problems using the transformations.
				CO5. Find the limit and derivative of a function at a point, the definite and indefinite integral of a function. Find the points of min/max of a function.
		U23CM3	Analytical Geometry (Two & Three Dimensions)	CO1. Find pole, polar for conics, diameters, conjugate diameters for ellipse and hyperbola
				CO2. Find the polar equations of straight line and circle, equations of chord, tangent and normal and to find the asymptotes of hyperbola
				CO3. Explain in detail the system of Planes
				CO4. Explain in detail the system of Straight lines
				CO5. Explain in detail the system of Spheres
		U23CM4	Integral Calculus	CO1. Determine the integrals of algebraic, trigonometric and logarithmic functions andto find the reduction formulae
				CO2. Evaluate double and triple integrals and problems using change of order of integration
				CO3. Solve multiple integrals and to find the areas of curved surfaces and volumes ofsolids of revolution
				CO4. Explain beta and gamma functions and to use them in solving problems of integration
				CO5. Explain Geometric and Physical applications of integral calculus
		U23GM03	Object Oriented Programming with C++	CO1. Recalling various concepts relating to languages and Applications
				CO2. Understanding various functions of C++ language
				CO3. Applying various classes and objects
				CO4. Analyzing different types of inheritance system
				CO5. Understanding working bout files and exception handling
				CO1. Solve problems in Percentage, Profit and Loss

		U23SEM2	Arithmetic and Mathematical Logic	CO2. Interpret the data
				CO3. Outline the basic principles and operations on sets.
				CO4. Write symbolic representation of statements.
				CO5. Analyze the validity of a statement using truth table.
		U23SEM3	Mathematical Reasoning	CO1. Predict the relation with verbal reasoning.
				CO2. Predict the relation with non-verbal reasoning.
				CO3. Analyze the sense of directions
				CO4. Solve puzzles
				CO5. Use logical deductions to verify the validity of the conclusion
		U23CM5	Vector Calculus and Applications	CO1. Find the derivative of vector and sum of vectors, product of scalar and vectorpoint function and to Determine derivatives of scalar and vector products
				CO2. Applications of the operator ‘del’ and to Explain soleonidal and irrotationalvector
				CO3. Solve simple line integrals
				CO4. Solve surface integrals and volume integrals
				CO5. Verify the theorems of Gauss, Stoke’s and Green’s Two Dimension
		U23CM6	Differential Equations and Applications	CO1. Determine solutions of homogeneous equations, non-homogeneous equations of degree one in two variables, solve Bernoulli’s equations and exact differential equations
				CO2. Find the solutions of equations of first order but not of higher degree and to Determine particular integrals of algebraic, exponential, trigonometric functions and their products
				CO3. Find solutions of simultaneous linear differential equations, linear equations of second order and to find solutions using the method of variations of parameters
				CO4. Form a PDE by eliminating arbitrary constants and arbitrary functions, find complete, singular and general integrals, to solve Lagrange’s equations
				CO5. Explain standard forms and Solve Differential equations using Charpit’s method

		U23SEM4	Data Analysis Using SPSS	CO1. Relating the SPSS packages and Files
				CO2. Use the basic functions of SPSS
				CO3. Process data and generate statistics for some demographic variable analysis.
				CO4. Generate graphs and diagrams for data analysis.
				CO5. Process data and generate outputs using SPSS software.
		U23SEM5	Mathematics for Competitive examinations	CO1. Recall H.C.F, LCM, decimal fractions and simplifications
				CO2. Understand, determine and apply the concept of average and percentage.
				CO3. Classify profit and loss, Ratio and Propositions.
				CO4. Sketch the ability of partnership, Time and work.
				CO5. Demonstrate the knowledge of Simple and Compound interest.
		U23CM7	Industrial Statistics	CO1. Analyse Statistics quality control data
				CO2. Understanding the concepts of attributes .
				CO3. Analyze the time series
				CO4. Analyse the variance
				CO5. Understanding the concepts of design of experiments
		U23CM8	Elements of Mathematical Analysis	CO1. Explain in detail about sets and functions, equivalence and countability and the LUB axiom
				CO2. Explain Sequence and Subsequence of real numbers and to find the limit of sequence to test for convergent, divergent, bounded and monotone sequences
				CO3. Explain the operations on convergent and divergent sequences and to Explain the concepts of limit superior and limit inferior and the notion of Cauchy sequences
				CO4. Classify the series of real numbers and the alternating series and their convergence and divergence, the conditional convergence and absolute convergence and solve problems on convergence of the sequences

				CO5. Explain about the metric spaces and functions continuous on a Metric space
		U23SEM6	LaTex Theory	CO1. Successfully install LaTeX and its related components on a computer.
				CO2. Independently typeset Mathematical, Scientific and general purpose documents in a well organized manner and atmost accuracy
				CO3. Use of LaTeX and various templates acquired from the course to compose Mathematical documents, Presentation and reports
				CO4. Special Environments Enumerates, Tabular, Cases etc
				CO5. Power point Presentation using Beamer
		U23SEM7P	LaTex Practical	CO1. To create different alignments in a document.
				CO2.To prepare a Bio-data
				CO3. To compose Mathematical expressions
				CO4. To prepare a question paper using latex
				CO5.To convert Latex file to Power point Presentation .
		U23CM9	Abstract Algebra	CO1. Explain groups, subgroups and cyclic groups
				CO2. Explain about Normal subgroup, Quotient groups, Homomorphisms and Automorphisms and verify the functions for homomorphism and automorphism properties
				CO3. Explain Permutation groups and apply Cayley's theorem to problems
				CO4. Explain Rings, Ideals and Quotient Rings and examine their structure
				CO5. Discuss about the field of quotient of an integral domain and to Explain in detail about Euclidean Rings
		U23CM10	Real Analysis	CO1. Explain the concepts of Continuous and Discontinuous functions, open and close sets, Connectedness, Completeness and Compactness
				CO2. Explain the concepts of bounded and totally bounded sets, continuity of inverse functions and Uniform continuity
				CO3. Define the sets of measure zero, to Explain about the existence and properties of Riemann integral

				CO4. Explain the concept of differentiability and to Explain Rolle's theorem, Law of mean, and Fundamental theorem of calculus
				CO5. Explain the point wise and uniform convergence of sequence of function and to derive the Taylor's theorem
		U23CM11	Mechanics	CO1. Define Resultant, Component of a Force, Coplanar forces, like and unlike parallel forces, Equilibrium of a Particle, Limiting equilibrium of a particle on an inclined plane.
				CO2. Define Moment of a force and Couple with examples. Define Parallel Forces and Forces acting along a Triangle, Solve problems on frictional forces
				CO3. Define work, energy, power, rectilinear motions under varying forces. Define Simple Harmonic Motion and find its Geometrical representation
				CO4. Define Projectile, impulse, impact and laws of impact. Prove that the path of a projectile is a parabola. Find the direct and oblique impact of smooth elastic spheres
				CO5. Define central orbits, explain conic as centered orbits and solve problems related to central orbits
		U23CM12	Number Theory	CO1. Recall the concepts matheatical induction and early number theory.
				CO2. Demonstrate divisibility theory in integers
				CO3. Derive fundamental theorem of arithmetic.
				CO4. Analyse and apply the theory of congruence .
				CO5. Describe Fermat's theorem.
		U23SIM1	Summer Internship/Industry Training	CO1.To improve knowledge and skills in their area of specialization
				CO2. To gain better job prospects.
				CO3.To learn to communicate effectively.
				CO4. To develop business skils.
				CO5. To reduce waste in all aspects
				CO1. Solve linear programming problems.
				CO2. Apply different methods to find transportation cost.

UMAE	**B.Sc. Mathematics**	U23DM01	Operations Research	CO3. Recognize Hungarian method to solve Assignment Problems.
				CO4. State Maximin-Minimax principle and list the types of inventories.
				CO5. Identify critical path.
		U23DM02	Numerical Methods with Applications	CO1. Solve the Newton's Raphson method
				CO2. Find the Calculation of matrix and inverse of a matrix
				CO3. Discuss and demonstrate the concept of interpolation
				CO4. Understand the Newton's Forward and Backward formula
				CO5. Apply Euler's and Runge Kutta method for fourth order
		U23DM03	Graph Theory & Applications	CO1. Acquire the knowledge of basic definitions of Graphs, Isomorphism, Walks, Connected Graphs and Cut Vertices and Edges
				CO2. Gain the knowledge of Eulerian and Hamiltonian Graphs
				CO3. Identify the concept of Bipartite Graphs and Marriage problem
				CO4. Perceive the idea of Planar graphs
				CO5. Recognize the concept of Colouring and Directed graphs
		U23DM04	Mathematical Statistics	CO1. Recall basic concepts and solve problems in Probability Theory.
				CO2.Classify discrete and continuous one dimensional and two dimensional random variables.
				CO3.Define and find Mathematical Expectation, Moment Generating . Function and Characteristic Function.
				CO4.Describe Binomial and Poisson distributions
				CO5.Recognize the concept of Rectangular and Normal distributions
				CO1.Find the Laplace Transform of some standard functions.

		U23DM05	Integral Transforms & Z Transforms	CO2.Find the Inverse Laplace of functions and solve the linear differential equations dimensional random variables.
				CO3.Define the Fourier Transform and explain some properties Function and Characteristic Function.
				CO4.Evaluate Fourier sine transform, cosine transform of functions
				CO5.Evaluate Z-transforms and Inverse Z-transform
		U23DM06	Fuzzy Sets & its applications	CO1.Recall the basic definitions, characteristics and significance of fuzzy sets.
				CO2. Classify the operations on fuzzy sets, concept of extension principle. equations dimensional random variables.
				CO3.List the concept of properties on interval valued arithmetic operations Function and Characteristic Function.
				CO4.Interpret the combination of logical connectives and fuzzy connectives.
				CO5. Explain the concept of – fuzzy equivalence relation
		U23DM07	Optimization Techniques	CO1.Analyse and solve sequencing Problems
				CO2.Demonstrate Queuing Theory and Classify Queuing Models. equations dimensional random variables.
				CO3.Distinguish Single server models with finite capacity and infinite capacity, derive their characteristics and solve problems Function and Characteristic Function.
				CO4. Analyse Birth and Death Process and derive its Characteristics
				CO5.Distinguish multi server models with finite capacity and infinite capacity, derive their characteristics and solve problems
		U23DM08	Astronomy / Elements of Space Science	CO1.Understand Celestial co-ordinates, sidereal time
				CO2.Demonstrate effects of Geometric, Heliocentric, Parallax. equations dimensional random variables.
				CO3.Find equation of time and conversion of time Function and Characteristic Function.
				CO4. Understand relation between sidereal month Lunation and relation between theorem
				CO5. Understand Planetary phenomena & Astronomical instruments derive their characteristics and solve problems

		U23DM09	Discrete Mathematics	CO1.Able to apply the concepts of propositional Logic
				CO2.Able to analyze and interpret predicate logic equations dimensional random variables.
				CO3.Able to apply the concepts of Lattices & Boolean Algebra. Function and Characteristic Function.
				CO4. Ability to solve problems in Combinatorics between theorem
				CO5. Ability to apply the concepts of formal languages derive their characteristics and solve problems
		U23CM13	Linear Algebra	CO1. Acquire a detailed knowledge about vector spaces and subspaces
				CO2. Explain the concepts of Linear Dependence, Linear Independence, Bases and Dimension of basis
				CO3. Explain the concept of Linear Transformations, their Matrix representation and the notion of dual spaces
				CO4. Find the Eigen values and Eigen vectors, to apply the concepts for diagonalisation
				CO5. Explain about Inner product and norms and to apply Gram Schmidt Orthogonalization Process to problems on inner product spaces
		U23CM14	Complex Analysis	CO1. Explain about analytic functions, their differentiation and continuity and to verify the Harmonic functions using analyticity conditions
				CO2. Explain the concept of Conformal mappings and mappings by linear transformations and linear fractional transformations
				CO3. Explain about the integrations of functions over simply and multiply connected domains and to derive the Cauchy integral formula, Liouvlle's theorem, Fundamental theorem of Algebra and Maximum Module Principle
				CO4. Find the convergence the sequences and series, to derive Taylor's and Laurent's series
				CO5. Find the nature of singularities, to find the residue of a given function at a given singular point, to Explain about zeros and poles and to evaluate real improper integrals (Excluding poles on the real axis)
		U23CM15	Mathematical Modeling	CO1. Explain simple situations requiring Mathematical Modelling and to Determine the characteristics of such models
				CO2. Model using differential equations in-terms of linear growth and Decay models
				CO3. Model using systems of ordinary differential equations of first order, to discuss about various models under the categories 'Epidemics' and 'Medicine'
				CO4. Explain in detail about difference equations

				CO5. Model using difference equations
		U23DM09	Discrete Mathematics	CO1: Able to apply the concepts of propositional Logic
				CO2: Able to analyze and interpret predicate logic
				CO3: Able to apply the concepts of Lattices & Boolean Algebra.
				CO4: Ability to solve problems in Combinatorics
				CO5: Ability to apply the concepts of formal languages
		U23PCM1	Professional Competency Skill Enhancement Course-Maths for JAM/CUET/-PG/TANCET	CO1. Recall one-one, onto mapping of functions.
				CO2. Understand, determine and apply the concept of even odd and increasing functions
				CO3. Solve problems in limits
				CO4. Demonstrate the knowledge in properties of triangle
				CO5. Explain in detail about circles, heights and distances.
		U23GM04	Statistical Methods	CO1. Develop an understanding of the fundamental concepts and principles of statistics, including data collection, classification, and tabulation.
				CO2. Apply measures of central tendency and dispersion to analyze raw and grouped data and draw meaningful conclusions
				CO3. Utilize correlation and regression analysis to explore relationships between variables and fit various types of curves to the data
				CO4. Construct and interpret index numbers, including weighted and unweighted indices and chain indices.
				CO5. Understand the association of attributes and how to measure consistency, independence, and Yule's coefficient of association
		U23GM05P	Statistical Methods - Practicals	CO1. To find the skewness and kurtosis of a given data set distribution. principles of statistics, including data collection, classification, and tabulation.
				CO2. To apply Bayes's theorem to solve simple problem. analyze raw and grouped data and draw meaningful conclusions
				CO3. To find the mass function of abinomial distribution. relationships between variables and fit various types of curves to the data

				CO4. To use the normal distribution to calculate confidence intervals for mean and unweighted indices and chain indices.
				CO5. To conduct a hypothesis test for the difference between two variance using the F-distribution.
		U23GM06	Introduction to data science	CO1. To identify the different facets of data and explain the data science process
				CO2. To retrieve and transform data, perform exploratory data analysis, and build models.
				CO3. To evaluate and compare machine learning algorithms and apply them to real world data science problems.
				CO4. To understand the Hadoop framework and use it for big data processing.
				CO5. To explain the concepts of NoSQL databases and apply them to solve data management problems.
		U23GM07	Introduction to machine learning.	CO1. To understand the basics of Machine Learning, including its applications
				CO2. To get knowledge of Classification and Selection techniques, including various distance- based Machine Learning methods.
				CO3 To implement and evaluate Unsupervised Machine Learning techniques such as Clustering and PCA
				CO4. To design Machine Learning Algorithms for classification and regression tasks and evaluate their performance using relevant metrics
				CO5. To apply Statistical Learning Theory and Ensemble methods to improve Machine Learning algorithms' performance.
		U23GM08P	Introduction to Machine Learning Practicals	CO1. Understand the various concepts of AI Techniques
				CO2. Understand various AI approaches.
				CO3. Understand various Search Algorithm in AI.
				CO4. Understand reasoning in AI.
				CO5. Understand Knowledge Representation in AI.
				CO1.To implement supervised learning algorithm ,baye's theorem ,clustering algorithm using Python.
				CO2.To implement a decision tree algorithm using Python.

		U23GM09	Introduction to Artificial Intelligence	CO3.To implement principal component analysis on a data set using Python.
				CO4. To use clustering algorithm in R.
				CO5. To build a decision tree using R
		U23GM010	Mathematical Finance	CO1. Apply mathematical concepts and techniques to solve financial problems.
				CO2. Analyze different types of financial instruments and evaluate their risks and returns.
				CO3. Construct investment portfolios and manage risks.
				CO4. Communicate financial information effectively to stakeholders
				CO5. Understand the ethical and professional standards in the finance industry.
		U23GM011	Allied Mathematics -Paper I	CO1. Analyse the Binomial series
				CO2. Understand and apply the concept of Exponential & Logarithm series
				CO3. Get clear concept of Relation between roots and coefficients
				CO4. Demonstrate the techniques of Newton's and Horner's method
				CO5. Solve the problems related to Radius& Center of curvature
		U23GM012	Allied Mathematics -Paper II	CO1. Understand the Hyperbolic functions and Logarthiam of complex number
				CO2. Analysis the properties of definite integral
				CO3. Acquire a good foundation in Differential equation of first order
				CO4. Get Clear Concepts of second order equations and solve the problem
				CO5: Demonstrate the techniques of partial differential equations
				CO1. Find the Gradient, Curl and Divergence of a function

		U23GM013	Allied Mathematics -Paper III	CO2. Evaluate line integral and surface integral
				CO3. Understand the concept of Laplace Transform and inverse Laplace Transform
				CO4. Calculate correlation coefficient and Interpolation
				CO5: Compute Fourier, Cosine and Sine Series
		U23GM014	Allied Mathematics -Paper I	CO1. Analyse the Binomial series
				CO2. Understand and apply the concept of Exponential & Logarithm series
				CO3. Get clear concept of Relation between roots and coefficients
				CO4. Demonstrate the techniques of Newton's and Horner's method
				CO5. Understand the Hyperbolic functions and Logarthiam of complex number
		U23GM015	Allied Mathematics -Paper II	CO1. Solve the problems related to Radius& Center of curvature
				CO2. Analysis the properties of definite integral
				CO3. Acquire a good foundation in Differential equation of first order
				CO4. Get Clear Concepts of second order equations and solve the problem
				CO5: Demonstrate the techniques of partial differential equations
		U23GM016	Allied Mathematics -Paper III	CO1. Calculate correlation coefficient and Interpolation
				CO2: Compute Fourier, Cosine and Sine Series
				CO3. Find the Gradient, Curl and Divergence of a function
				CO4. Evaluate line integral and surface integral
				CO5. Understand the concept of Laplace Transform and inverse Laplace Transform

		U23CP1	Properties of Matter and Acoustics	CO1	Relate elastic behavior in terms of three modulii of elasticity and working of torsion pendulum.
				CO2	Able to appreciate concept of bending of beams and analyze the expression, quantify and understand nature of materials.
				CO3	Explain the surface tension and viscosity of fluid and support the interesting phenomena associated with liquid surface, soap films provide an analogue solution to many engineering problems.
				CO4	Analyze simple harmonic motions mathematically and apply them. Understand the concept of resonance and use it to evaluate the frequency of vibration. Set up experiment to evaluate frequency of ac mains.
				CO5	Understand the concept of acoustics, importance of constructing buildings with good acoustics.
					Able to apply their knowledge of Ultrasonics in real life, especially in medical field and assimilate different methods of production of ultrasonic waves.
		U23CP2P	Physics Practical 1	CO1	Relate elastic behavior in terms of modulii of elasticity and working of torsion pendulum.
				CO2	Able to appreciate concept of bending of beams and analyze the expression, quantify and understand nature of materials.
				CO3	Explain the surface tension and viscosity of fluid and support the interesting phenomena associated with liquid.
				CO4	Understand the theoretical principles of Matter.
				CO5	Improve the analytical and observations ability in Physics Experiments.
		U23FP1	Introductory Physics	CO1	Know where all physics principles have been put to use in daily life.
				CO2	Appreciate the concepts with a better understanding.
				CO3	Understand the basic Principle behind the some Home Appliances.
				CO4	Apply Solar Energy in Domestic level.
				CO5	To know where all physics principles have been put to use in daily life and appreciate the concepts with a better understanding also to know about Indian scientists who have made significant contributions to Physics
		U23CP3	Heat, Thermodynamics and Statistical Physics	CO1	Acquires knowledge on how to distinguish between temperature and heat. Introduce him/her to the field of thermometry and explain practical measurements of high temperature as well as low temperature physics. Student identifies the relationship between heat capacity, specific heat capacity. The study of Low temperature Physics sets the basis for the students to understand cryogenics, superconductivity, super fluidity and Condensed Matter Physics
				CO2	Derive the efficiency of Carnot's engine. Discuss the implications of the laws of Thermodynamics in diesel and petrol engines.
				CO3	Able to analyze performance of thermodynamic systems viz efficiency by problems. Gets an insight into thermodynamic properties like enthalpy, entropy.

				CO4	Study the process of thermal conductivity and apply it to good and bad conductors. Quantify different parameters related to heat, relate them with various physical parameters and analyse them.
				CO5	Interpret classical statistics concepts such as phase space, ensemble, Maxwell-Boltzmann distribution law. Develop the statistical interpretation of Bose-Einstein and Fermi-Dirac . Apply to quantum particles such as photon and electron.
		U23CP4P	Physics Practical 2	CO1	Apply their knowledge gained about the concept of heat and sound waves.
				CO2	Able to calculate the frequency of ac mains set up experimentation.
				CO3	Verify theories, quantify and analyse, in the basic Principle behind the Heat Experiments.
				CO4	Able to correlate the results.
				CO5	Know about the physics principles in heat experiments.
		U23SEP2	Astrophysics	CO1	Understand the presently accepted formation theories of the solar system based upon the observational and physical constrains.
				CO2	Describe the features of objects in the Solar system giving details of similarities and differences between these objects. Understand the fundamental concepts of the sky, the stars and motion of planets.
				CO3	Understanding the basic properties of the Sun and other Stars.
				CO4	Understand the concept of stellar distance and magnitude of star light. Also students extend their understanding of physical concepts that apply to the study of block hole.
				CO5	Hands on training on basic constructs of telescope & night sky observation, visit the National observatory laboratory and conducting case study.
		U23SEP3	Energy physics	CO1	Get the understanding of the conventional and non-conventional energy sources.
				CO2	Describe the features of their conservation of Energies.
				CO3	Understand the basic ideas of various types of Energy and their utilizations in daily life.
				CO4	Able to state the advantages and disadvantages of fuel devices.
				CO5	Acquired the knowledge of Energy Storage Devices.
				CO1	Understand the Newton’s Law of motion, understand general theory of relativity, Kepler’s laws and Realize the basic principles behind planetary motion.
				CO2	Acquire the knowledge on the conservation laws.

		U23CP5	Mechanics	CO3	Apply conservation law and calculate energy of various systems, understand and differentiate conservative and non-conservative forces.
				CO4	Gain knowledge on rigid body dynamics and solve problems based on this concept.
				CO5	Appreciate Lagrangian system of mechanics, apply D' Alembert's principle.
		U23CP6P	Physics Practical 3	CO1	Construct circuits to learn about the concept of electricity, current, resistance in the path of current.
				CO2	Able to calculate the different parameters that affect a circuit in Electrical experimentation.
				CO3	Verify theories, quantify and analyse, in the basic Principle behind the Electrical Experiments.
				CO4	Able to correlate the results.
				CO5	Able to set up the experiments, observe, analyse and assimilate the results in Electrical experiments.
		U23SEP4	Mobile Phone Servicing	CO1	Achieve the importance of embarking on self-employment and has developed the confidence and personal skill for the same.
				CO2	Understand the fundamentals of electronic components and functions.
				CO3	Test and identify the faults.
				CO4	Acquire the knowledge of maintenance and servicing
				CO5	To become a self-secured, and job satisfied in servicing Mobile Phone Servicing.
		U23SEP5	C Programming	CO1	define the basics of programming language
				CO2	understand the concept of input and output operations
				CO3	describe decision making and branching
				CO4	discuss the use decision making and looping
				CO5	describe arrays and strings
				CO1	Outline basic knowledge of methods of rectifying different defects in lenses, articulate technological applications of eyepieces

		U23CP7	Optics and Laser Physics	CO2	Discuss the principle of superposition of wave, use these ideas to understand the wave nature of light through working of interferometer
				CO3	Extend the knowledge about nature of light through diffraction techniques; apply mathematical principles to analyse the optical instruments
				CO4	Interpret basic formulation of polarization and gain knowledge about Polarimeter, appraise its usage in industries
				CO5	Relate the principles of optics to various fields of IR, Raman and UV spectroscopy and understand their instrumentation and application in industries
		U23CP8P	Physics Practical 4	CO1	Able to set the apparatus and learn about the concept of various optical phenomena.
				CO2	Able to understand and Demonstrate,the working principles behind, various Optical experimentation.
				CO3	Apply and calculate different parameters by the basic Principle behind the Optical Experiments.
				CO4	Able to correlate and interpret the results.
				CO5	Able to set up the experiments, observe, analyse and assimilate the results in Optical experiments.
		U23SEP6	Physics of Medical Instruments	CO1	List the electrode material and types of electrodes.
				CO2	Understand the characteristics of the recording system.
				CO3	Explain the safety measures in operation theatre.
				CO4	Acquire the knowledge about medical imaging techniques.
				CO5	Understand the working of medical equipments.
		U23SEP7	Home Electrical Installation	CO1	Get knowledge on electrical instruments and circuits
				CO2	Learn about production and transmission of electricity
				CO3	Get knowledge on domestic electrical wiring techniques
				CO4	Learn about get power rating and power delivered
				CO5	Know about safety precautions and servicing.

		U23CP9	Electricity, Magnetism and Electromagnetism	CO1	Describe various thermo-electric effects and their properties.
				CO2	Apply Biot and Savart law to study the magnetic effect of electric current.
				CO3	Use Faraday and Lenz laws in explaining self and mutual inductance.
				CO4	Analyze the time variation of current and potential difference in AC circuits.
				CO5	Relate different physical quantities used to explain magnetic properties of materials.
		U23CP10	Atomic and Nuclear Physics	CO1	**List the properties of electrons and positive rays, define specific charge of positive rays and know about different mass spectrographs.**
				CO2	**Outline photoelectric effect and the terms related to it, State laws of photoelectric emission, Explain experiments and applications of photo electric effect, Solve problems based on photoelectric equation.**
				CO3	**Explain different atom models, Describe different quantum numbers and different coupling schemes.**
				CO4	**Differentiate between excitation and ionization potentials, Explain Davis and Goucher's experiment, Apply selection rule, AnalysePaschen -Back effect ,Compare Zeeman and Stark effect.**
				CO5	**Understand the condition for production of laser, Appreciate various properties and applications of lasers.**
		U23CP11P	Physics Practical 5	CO1	Able to set the apparatus and learn about the concept of various optical principles and its phenomena.
				CO2	Able to understand and Demonstrate,the working principles behind, various physics experimentation.
				CO3	Apply and calculate different parameters in physics Experiments.
				CO4	Able to correlate and interpret the results.
				CO5	Able to set up the experiments, observe, analyse and assimilate the results in Optical experiments.
		U23CP12	Analog and Communication Electronics	CO1	Explain the basic concepts of semiconductors devices.
				CO2	know and classify the basic principles of biasing and transistor amplifiers
				CO3	Acquire the fundamental concepts of oscillators.
				CO4	Understand the working of operational amplifiers

				CO5	Learn and analyze the operations of sequential and combinational digital circuits
		U23DP03	Advanced Mathematical Physics	CO1	Learnt the advance level in Mathematical Physics with the understanding of fundamentals of matrices and vector calculus
				CO2	Learnt the advanced topics and theorems.
				CO3	Acquire the advanced level in mathematical physics.
				CO4	Understand the concepts of partial differential equations
				CO5	Able to apply the special functions and partial differential equations in research at a later stage.
		U23DP05	Materials Science	CO1	Learn imperfections in crystals, deformation of materials and testing of materials.
				CO2	Learn elastic behaviour of materials.
				CO3	Learn about deformation and strengthening methods.
				CO4	Get knowledge on behavior of a material, under the action of light and their applications.
				CO5	Know the applications of crystal defects.
		U23CP13	Quantum Mechanics and Relativity	CO1	Understand various postulates of special theory of relativity.
				CO2	**Appreciate the importance of transformation equations and also the general theory of relativity.**
				CO3	Realise the wave nature of matter and understand its importance
				CO4	Derive Schrodinger equation and also realize the use of operators.
				CO5	Apply Schrödinger equation to simple problems.
		U23CP14	Solid State Physics	CO1	Classify the bonding and crystal structure also learn about the crystal structure analysis using X ray diffraction.
				CO2	Understand the lattice dynamics and thus learn the electrical and thermal properties of materials.
				CO3	Give reason for classifying magnetic material on the basis of their behaviour.

				CO4	Comprehend the dielectric behavior of materials.
				CO5	Appreciate the ferroelectric and super conducting properties of materials.
		U23CP15P	Physics Practical 6	CO1	Able to perform basic experiments on characteristics of electronic devices.
				CO2	Able to understand and Demonstrate, the various Electronics experimentation with the knowledge of its working principles and its phenomena behind it.
				CO3	Able to get into the applications such as amplifiers, oscillators, counters, multi-vibrators and calculate different parameters in the Experiments.
				CO4	Able to Perform fundamental experiments on microprocessor 8085 and correlate and interpret the results.
				CO5	Learn to write programs by themselves.
		U23DP11	Digital Electronics and Microprocessor 8085	CO1	Learn about number systems, Boolean algebra, logical operation and logic gates
				CO2	Understand the working of adder, subractors, multiplexers and de multiplexers.
				CO3	Get knowledge on flip-flops and storage devices.
				CO4	Gain inputs on architecture of microprocessor 8085.
				CO5	Develop program writing skills .on microprocessor 8085.
		U23DP08	Nano Science And Nano Technology	CO1	Understand the basic of nanoscience and explore the different types of nanomaterials and should comprehend the surface effects of the nanomaterials.
				CO2	Explore various physical, mechanical, optical, electrical and magnetic properties nanomaterials.
				CO3	Understand the process and mechanism of synthesis and fabrication of nanomaterials.
				CO4	Analyze the various characterization of Nano-products through diffraction, spectroscopic, microscopic and other techniques.
				CO5	Apply the concepts of nanoscience and technology in the field of sensors, robotics, purification of air and water and in the energy devices.
				CO1	Develop the method of attending multiple choice questions in mechanics, properties of matter
				CO2	Enhance the skill in solving problems and answering multiple choice questions in physics

UPHE	B.Sc. Physics	U23PCP1	Physics for Competitive examinations.	CO3	Understand and analyze the tricks in attending more questions (multiple choice) in a short interval of time.
				CO4	Apply the knowledge of physics in solving problems.
				CO5	Develop the confidence of attending competitive exams.
		U23CC1	General Chemistry I	CO-explaintheatomicstructure,waveparticledualityofmatter,periodicpropertiesbonding, andpropertiesofcompounds	
				CO2 classifytheelementsintheperiodictable,typesofbonds,reactionintermediates electroniceffects in organic compounds, types of reagents.	
				CO3applythetheoriesofatomicstructure,bonding,tocalculateenergyofaspectraltransition,Δx, Δpelectronegativity,percentageioniccharacter andbondorder	
				CO4evaluatetherelationshipexistingbetweenelectronicconfiguration,bonding, geometryofmoleculesandreactions;structurereactivityand electroniceffects	
				CO5 construct MO diagrams, predict trends in periodic properties, assess the properties of elements, and explain hybridization in molecules, nature of H – bonding and organic reaction mechanisms.	
		U23CC2P	Quantitative Inorganic Estimation (titremetry) and Inorganic Preparations	CO1 explainthebasicprinciplesinvolvedintitrimetricanalysisandinorganicpreparations.	
				CO2 comparethemethodologiesofdifferenttitrimetricanalysis.	
				CO3 calculatetheconcentrationsofunknownsolutionsindifferentwaysanddevelopthe skillto estimate the amount of a substance present in a given solution.andassess the yield of different inorganic preparations and identify the end point of various titrations	
				CO4 Asses the yield of different inorganic preparations and identify the end point of various titrations	
		U23SEC1	Food Chemistry	CO1 learnaboutFoodadulteration-contaminationofWheat,Rice,Milk,Butter.	
				CO2 get an awareness about food poisons like natural poisons (alkaloids - nephrotoxin)pesticides, DDT, BHC, Malathio	
				CO3 get an exposure on food additives, artificial sweeteners, Saccharin, Cyclomate andAspartate in the food industries.	
				CO4 acquireknowledgeonbeverages,softdrinks,soda,fruitjuicesandalcoholic beveragesexamples	
				CO5 studyaboutfatsandoils-Sourcesofoils-productionofrefinedvegetable oils-preservation. Saturatedandunsaturatedfats–MUFAandPUFA	
				CO1 learnaboutthechemicalsusedineverydaylifeaswellasair pollutionandwaterpollution.	
				CO2 getknowledgeonbuildingmaterialscement,ceramics,glassandplastics,polythene,PVCbakelite,polyesters	

		U23SEC2	Role of Chemistry in Daily Life	CO3 acquire information about Food and Nutrition. Carbohydrates,Proteins, FatsAlsohave an awareness about Cosmetics Tooth pastes, face powder, soapsanddetergents.
				CO4 discuss about the fertilizers like urea, NPK fertilizers and super phosphate. Fuelclassification solid, liquid and gaseous; nuclearfuel -examples and uses
				CO5 haveanideaaboutthepharmaceuticaldrugsanalgesicsandantipyreticslike paracetamolandaspirinandalsoaboutpigmentsanddyesanditsapplications
		U23FC1	Foundation course	CO1 Learnabouttheconceptofhybridizationand
				CO2 DiscusstheVariousmethodsofmetalextraction
				CO3 Explainntheelectronicconfigurationofelements
				CO4 Explainthehardnessanditsremoval
				CO5 Acquireknowledgeabouttheroleofchemicalsinhealth
		U23CC3	General Chemistry II	CO1 explain theconceptof acids,basesand ionicequilibria;periodicproperties of s and p block elements, preparation and properties of aliphatic andaromatic hydrocarbons
				CO2 discusstheperiodicpropertiesofsandp-blockelements,reactionsof aliphatic andaromatic hydrocarbons and strength of acids
				CO3 classifyhydrocarbons,typesofreactions,acidsandbases,examinetheproperties sandp-blockelements, reactionmechanismsofaliphaticandaromatic hydrocarbons
				CO4 explaintheoriesofacids,basesandindicators,bufferactionandimportant compoundsof s-block elements
				CO5 assesstheapplicationofhardandsoftacidsindicators,buffers,compoundsofs andp-blockelements andhydrocarbons
		U23CC4P	Qualitative Organic Analysis and Preparation of Organic compounds	CO1 observethephysicalstate,odour,colourandsolubilityofthegiven organic compound.
				CO2 identify the presence of special elements and functional group in an unknown organic compound performing a systematicanalysis.
				CO3 comparemonoanddicarboxylicacids,primary,secondaryandtertiaryamines,monoanddiamides, monoandpolyhydricphenols, aldehyde and ketone, reducing and non- reducingsugarsandexplainthe reactionsbehindit.
		U23SEC3	Dairy Chemistry	CO4 exhibitasolidderivativewithrespecttotheidentifiedfunctionalgroup.
				CO1 understandaboutgeneralcompositionofmilk–constituentsanditsphysical properties
				CO2 acquire knowledge about pasteurization of Milk and various types of pasteurization -Bottle, Batch and HTST Ultra HighTemperature Pasteurization

		U23SEC3	Dairy Chemistry	
				CO3 LearnaboutCreamandButtertheircompositionandhowto estimatefatincreamandGhee
				CO4 explainaboutHomogenizedmilk,flavouredmilk,vitaminisedmilkandtone milk
				CO5 haveanideaabouthowtomakemilkpowderanditsdryingprocess-typesof drying
		U23SEC4	Cosmetics and Personal Grooming	CO1 knowaboutthecompositionofvariouscosmeticproducts
				CO2 understand chemical aspects and applications of hair care and dental care and skincare products.
				CO3 understandchemicalaspectsandapplicationsofperfumesandskincareproducts.
				CO4 ounderstandthemethodsofbeautytreatmentstheiradvantagesanddisadvantage
				CO5 understandthehazardsofcosmeticproducts.
		U23CC5	General Chemistry III	CO1 explainthekineticpropertiesofgasesbyusingmathematicalconcepts
				CO2 describethephysicalpropertiesofliquidandsolids;identifyvarioustypesof crystalswithrespecttoitspackingandapplytheXRDmethodforcrystalstructure determinations
				CO3 investigatetheradioactivity,nuclearenergyandit'sproduction,alsothenuclear wastemanagement
				CO4 writethenomenclature,physical&chemicalpropertiesandbasicmechanismsof haloorganiccompounds and alcohols
				CO5 investigatethenamedorganicreactionsrelatedtophenol;explainthepreparation andpropertiesofaromaticalcoholincludingthiol
		U23CC6P	Qualitative Inorganic Analysis	CO1 acquireknowledgeonthesystematicanalysisofMixtureofsalts.
				CO2 Identifytheanionsandthecations
				CO3 identifythecationsandanionsinthesoilandwaterandtotestthequalityof water.
				CO4 Assesstheroleofcommonioneffectandsolubilityproduct
		U23SEC5P	Entrepreneurial Skills in Chemistry	CO1 identifyadulteratedfooditemsbydoingsimplechemicaltests
				CO2 preparecleaningproductsandbecomeentrepreneurs

				CO3 educateothersaboutadulterationandmotivatethemtobecomeentrepreneurs
		U23SEC6	Pesticide Chemistry/	CO1 Teachaboutthepesticidesandtheirtoxicitywithrespecttostructureandcategory
				CO2 Explainthepreparationandpropertyofpesticides
				CO3 Investigatethepesticideresidues,preventionandcare
				CO4 Demonstratetheextractionandanalyticalmethodsofpesticideresidues
				CO5 Makeawarenesstothepubliconbio-pesticides
		U23CC7	General Chemistry IV	CO1 Explainthetermsandprocessesinthermodynamics;discussthevariouslaws ofthermodynamicsandthermochemical calculations.
				CO2 Discussthesecondlawofthermodynamicsanditsapplicationtoheatengine discussthird lawanditsapplicationonheatcapacitymeasurement
				CO3 Investigate the chemistry of transition elements with respect to various periodicproperties and group wise discussions
				CO4 Discussthefundamentalorganicchemistryofethers,epoxidesandcarbonyl compoundsincluding named organic reactions.
				CO5 Discuss the chemistry and named reactions related to carboxylic acids and their derivatives; discusschemistryofactivemethylenecompounds, halogen substituted acids and hydroxyl acids
		U23CC8P	Physical chemistry Practical - I	CO1 Describetheprinciplesandmethodologyforthepracticalwork
				CO2 Explaintheprocedure,dataandmethodologyforthepracticalwork.
				CO3 Applytheprinciplesofelectrochemistry,kineticsforcarryingoutthepractical work.
				CO4 Demonstratelaboratoryskillsforsafehandlingoftheequipmentandchemicals
		U23SEC7	Instrumental methods of chemical Analysis	CO1 applyerroranalysisinthecalibrationanduseofanalyticalinstruments,explain theory, instrumentationandapplicationofflamephotometryandAtomic AbsorptionSpectroscopy
				CO2 explaintheory,instrumentationandapplicationofUVvisibleandInfrared spectroscopy
				CO3 abletodiscussinstrumentation,theoryandapplicationsofthermaland electrochemicaltechniques
				CO4 explaintheuseofchromatographictechniquesintheseparationandidentification ofmixtures

UCHE	B.Sc Chemistry			CO5 explainpreparationofsolutions,stoichiometriccalculations
		U23SEC8	Forensic Science	CO1 LearnaboutthePoisons-typesandclassificationofpoisonsinthelivingandthedead organismsandalsogetinformationaboutPostmortem
				CO2 GetawarenessonHumanbombs,possibleexplosives(gelatinsticksandRDX)and metal defector devices and other security measures for VVIP- composition of bullets and detecting powder burns
				CO3 Detecttheforgerydocuments,differenttypesofforgedsignatures
				CO4 Haveanideaabouthowtotracksandtraceusingpolicedogs,footprints identificationandgaintheknowledgeinanalyzingbiologicalsubstances-blood
				CO5 HaveanideaDNAFingerprintingfortissueidentificationindismemberedbodies
		U23CC9	Organic Chemistry I	CO1 assign RS notations to chirals and EZ notations to olefins and explain conformations ofethane and butane.
				CO2 explainpreparationandpropertiesofaromaticandaliphaticnitrocompoundsandamines
				CO3 Explaincolourandconstitutionofdyesandfoodadditives
				CO4 discusspreparationandpropertiesoffivememberedheterocycleslikepyrrole,furan and thiophene
				CO5 discuss preparation and properties of six membered heterocycles like pyridine,quinoline and I isoquinoline
		U23CC10	Inorganic Chemistry	CO1 Explainisomerism,Werner'sTheoryandstabilityofchelatecomplexes
				CO2 discusscrystalfieldtheory,magneticpropertiesandspectralpropertiesofcomplexes
				CO3 explainpreparationandpropertiesofmetalcarbonyls
				CO4 giveacomparativeaccountofthecharacteristicsoflanthanoidsandactinoids
				CO5 explainpropertiesandusesofinorganicpolymersofsilicon,sulphur,boronandphosphorous
		U23CC11P	Gravimetric Analysis and Water Analysis	CO1 Describetheprinciplesandmethodologyforthepracticalwork
				CO2 Explaintheprocedureandmethodologyforthepracticalwork
				CO3 Applytheprinciplesofgravimetryforcarryingoutthegravimetric determnation

				CO4 Demonstratelaboratoryskillsforsafehandlingoftheequipmentand chemicals
		U23CC12P	Organic Estimation and Natural Products isolation	CO1 Describetheprinciplesandmethodologyfortheorganicestimation.
				CO2 Explaintheprocedureandmethodologyfortheisolationofnaturalproducts
				CO3 Applytheprinciplesofcomplexationforcarryingoutthecomplexometric titrations
				CO4 Demonstratelaboratoryskillsforsafehandlingoftheequipmentand chemicals
		U23DC01	Industrial chemistry	CO1 Summarize the properties of fuels which include petroleum,water gas, natural gas and propellents
				CO2 evaluatecosmeticproducts,soaps,detergents
				CO3 explainmanufactureofsugar,foodspoilagesandfoodadditives
				CO4 explainpropertiesofabrasives,manufactureofleatherandpaper
				CO5 explain properties and manufacture of lubricants and cement, and intellectual property rights
		U23DC02	Bio Chemistry	CO1explainmolecularlogicoflivingorganisms,compositionofblood and blood coagulation
				CO2 explainsynthesisandpropertiesofaminoacids,determinationofstructureof peptidesandproteins
				CO3 explainfactorsinfluencingenzymeactivityandvitaminsascoenzymes
				CO4 explainRNAandDNAstructureandfunctions
				CO5 explainbiologicalsignificanceofsimpleandcompoundlipids
		U23CC13	Organic Chemistry II	CO1 explainisolationandpropertiesofalkaloidsandterpenes
				CO2 explainpreparationandreactionsofmonoanddisachharides
				CO3 classify biomolecules and natural products based on their structure, properties,reactions and uses.
				CO4 explainmolecularrearrangementslikebenzidine,Hoffmannetc.

				CO5 preparationandpropertiesoforganolithiumcompounds
		U23CC14	Physical chemistry	CO1 constructphasediagramforonecomponentsystem,explainthepropertiesof freezingmixtureandcomponentwithcongruentmelting points
				CO2 applytheconceptsofchemicalkineticstopredictthe rateofthereactionand orderofthereaction, demonstratetheeffectoftemperatureonreactionrate,and thesignificanceoffreeenergyandentropyofactivation
				CO3 compare chemical and physical adsorption, Freundlich and Langmuiradsorption isotherms, and differentiate between homogenous and heterogeneous catalysis
				CO4 demonstratethetypesandcharacteristicsofcolloids,preparationofsolsand emulsions, anddeterminethemolecularweightsofmacromolecules
				CO5 utilizetheconceptsofphotochemistryinfluorescence,phosphorescence, chemiluminescence andcolorperceptionofvision.
		U23CC15P	Physical chemistry practical II	CO1 Describetheprinciplesandmethodologyforthepracticalwork.
				CO2 Explaintheprocedure,dataandmethodologyforthepracticalwork
				CO3 Apply the principles of phase rule and electrochemistry for carrying out the practical work
				CO4 Demonstratelaboratoryskillsforsafehandlingoftheequipmentandchemicals
		U23DC03	Fundamentals of spectroscopy	CO1 Explainelectricalandmagneticpropertiesofmaterialsandmicrowave spectroscopy
				CO2 explaintheory,instrumentationandapplicationsofInfraredandRaman spectroscopy
				CO3 Applyselectionrulestounderstandspectraltransitions,explainWoodward– Fieser's rule for the calculation of wavelength maximum of conjugated dienes
				CO4 explaintheory,instrumentationandapplicationsofNMRspectroscopy
				CO5explaintheory,instrumentationandapplicationsofMassspectrometry
		U23DC04	Nano Science	CO1 Explainthegeneralconceptsandphysicalphenomenaofrelevance withinthefieldofnanoscience.
				CO2 describetheproperties,synthesis,characteristicsofnanomaterials, specialnanomaterials and applications.
				CO3 examinethestructure,properties,applicabilityandcharacterizationof nanomaterials.
				CO4 analyzevarioussynthesisprocedures,characterizationsandusesofcarbon nanotubes,fullerene and graphene

				CO5 discussapplicationsofnanomaterialsofsensorsandinopticsandelectronics
		U23DC05	Polymer Science	CO1 explainclassificationofpolymers,elastomers,fibresandliquidresins
				CO2 explainadditionandcondensationpolymerization,mechanicalpropertiesof polymers
				CO3 determinethemolecularweightofpolymers,andexplainthethermal propertiesofpolymers
				CO4 explainreactionsofpolymersandpolymerprocessing
				CO5 discussspecialitypolymerslikePVC,PMMA,rubbers,biodegradable polymers
		U23DC06	Pharmaceutical Chemistry	CO1 Define the pharmaceutical terminologies; describe the principles in pharmacological activity, drug development, clinical chemistry, hematology,therapeutic drugs and treatment of diseases; list the types ofIPRandtrademarks
				CO2 Discuss the development of drugs, structural activity, disease types, physio chemical properties of therapeutic agents, significance of medicinal plants,clinicaltests and factors for patentability
				CO3 Discuss the development of drugs, structural activity, disease types, physio chemical properties of therapeutic agents, significance of medicinal plants,clinicaltests and factors for patentability
				CO4 explainclassificationofanalgesicsandanasthetics,andphysiological functionsofplasma protiens
				CO5 explainclassificationofanalgesicsandanasthetics,andphysiological functionsofplasma protiens
		U23PCC1	Chemistry for Competitive examination	CO1 : discuss General characteristics of alkanes, alkenes, alkynes, stereochemistry,Explaincarbohydrates, hybridization,polareffects
				CO2 describetheperiodicproperties,metallurgicalprocesses,typesofchemicalbonding and nuclear chemistry
				CO3 explainColligativeproperties,Phaserule,Catalysis,chemicalkineticsandelectrochemistry
				CO4 applytheconceptsofvolumetricanalysis,thermogravimetricanalysis
				CO5 discuss the properties of Paints, varnishes, cement, fuels soaps and detergents,insecticides
		U23GC20	CHEMISTRYFORPHYSICALSCIENCESI	CO1 gain in-depth knowledge about the theories of chemical bonding, nuclear reactionsandits applications
				CO2 evaluatetheefficienciesandusesofvariousfuelsandfertilizers
				CO3 : explain the type of hybridization, electronic effect and mechanism involved in theorganic reactions

				CO4 : applyvariousthermodynamicprinciples,systemsandphaserule
				CO5 Explainvariousmethodstoidentifyanappropriatemethodfortheseparationofchemicals
		U23GC21P	CHEMISTRY PRACTICALFOR PHYSICAL AND BIOLOGICAL SCIENCES	CO1 design, carry out, record and interpret the results of volumetric titration
				CO2 : apply their skill in the analysis of watehardness
				CO3 Carryout theorganic analysis
				CO4 gain knowledgeinorganic analysis
		U23GC22	CHEMISTRYFORPHYSICALSCIENCESII	CO1 write the IUPAC name for complex, different theories to explain the bonding incoordination compounds and water technology
				CO2 explainthepreparationandpropertyofcarbohydrate,aminoacidsandnucleicacids
				CO3 apply/demonstrate the electrochemistry principles in corrosion, electroplating and fuelcells.
				CO4 identify the reaction rate, order for chemical reaction and explain the purpose of acatalyst
				CO5 outline the various type of photochemical process.
		U23GC23	CHEMISTRYFORBIOLOGICAL SCIENCES-I	CO1 statethetheoriesofchemicalbonding,nuclearreactionsandits applictions
				CO2 evaluatetheefficienciesandusesofvariousfuelsandfertilizers
				CO3 explainthetypeofhybridization,electroniceffectandmechanisminvolvedin theorganic reactions
				CO4 demonstratethestructureandusesofantibiotics,anaesthetics,antipyretics andartificial sugars
				CO5 analysevariousmethodstoidentifyanappropriatemethodfortheseparation of chemical components
		U23GC24	CHEMISTRYFORBIOLOGICALSCIENCESII	CO1 write the IUPAC name for complex, different theories to explain the bonding in coordination compounds and water technology
				CO2 : explainthepreparationandpropertyofcarbohydrate
				CO3 enlightenthebiologicalroleoftransitionmetals,aminoacidsandnucleicacids

				CO4 apply/demonstrate the electrochemistry principles in corrosion, electroplating and fuel cells.	
				CO5 outlinethevarioustypeofphotochemicalprocess.	
		U23CZ1	Invertebrata	**CO1**	Understand the basic concepts of invertebrate animals and recall its structure and functions.
				CO2	Illustrate and examine the systemic and functional morphology of various groups of invertebrata.
				CO3	Differentiate and classify the animal's mode of life in various taxa and estimate the biodiversity.
				CO4	To compare and distinguish the various physiological processes and organ systems in lower animals.
				CO5	Infer and integrate the parasitic and economic importance of invertebrate animals.
		U23CZ2P	Invertebrata Practical	**CO1**	Identify and label the external features of different groups of invertebrate animals.
				CO2	Illustrate and examine the circulatory system, nervous system and reproductive system of invertebrate animals.
				CO3	Differentiate and compare the structure, function and mode of life of various groups of animals.
				CO4	To compare and distinguish the dissected internal organs of lower animals.
				CO5	Prepare and develop the mounting procedure of economically important invertebrates.
		U23GZ25	Allied Zoology - I	**CO1**	Recall the characteristic features invertebrates and chordates.
				CO2	Classify invertebrates up to class level and chordates up to order level
				CO3	Explain and discuss the structural and functional organisation of some invertebrates and chordates
				CO4	Relate the adaptations and habits of animals to their habitat
				CO5	Analyse the taxonomic position of animals.
				CO1	Recall the characteristic features invertebrates and chordates.
				CO2	Classify invertebrates up to class level and chordates up to order level, structural and functional organisation of some invertebrates and chordates, adaptations and habits of animals to their habitat

		U23GZ26P	Allied Zoology Practical	**CO3**	Recall the parts and working of body organs and developmental stages, name the patterns of inheritance and list different types of animal behavior and to analyse the different developmental stages
				CO4	Analyse the working of body and immune systems, understand the different patterns of inheritance
				CO5	Gain the knowledge on relationship the behaviour of animals to physiology. Analyse the different types of behaviour
		U23SEZ1	Ornamental Fish farming and Management	**CO1**	The students will be able to identify, culture, maintain and market the commercially important ornamental fishes.
				CO2	The knowledge and skills gained on the different aspects of ornamental fish keeping will enable the students to develop entrepreneurship potential and help in self employment.
				CO3	Understand the aquarium construction and management
				CO4	Gain the knowledge on fish diseases and their control strategies
				CO5	Envisage about entrepreneurship on Ornamental fish culture
		U23FZ1	Fundamentals of Zoology	**CO1**	increase the awareness and appreciation of various animal species and their characteristics
				CO2	develop an understanding about classification of animals and nomenclature
				CO3	distinguish between Prokaryotic and Eukaryotic cells and analyse the various cellular organelles
				CO4	comprehend the basic structure of biologically important molecules and also the basic Principles of Genetics
				CO5	understand the core concepts and fundamentals of Molecular Biology , Biotechnology and Bioinformatics
		U23CZ3	Chordata	**CO1**	Classify, Identify and recall the name and distinct features of different subphylum belonging to phylum Chordata.
				CO2	Explain, and relate the origin, structural organization and evolutionary aspects of vertebrates.
				CO3	Analyze, compare and distinguish the developmental stages and describe the important biological process.
				CO4	Correlate the different modes of life and parental care among different vertebrates.
				CO5	Summarise the morphology and ecological adaptations in vertebrates and list out the economic importance.
				CO1	Identify and recall the name and distinct external and internal features of animals belonging to phylum Chordata.

		U23CZ4P	Chordata Practical	**CO2**	Explain the structural organization of various organs and systems in different classes of vertebrates.
				CO3	Analyse, compare and distinguish the morphological features and developmental stages of chordates
				CO4	Dissect and explain various organs and internal systems in different vertebrates and correlate its function.
				CO5	Summarise the morphology and ecological adaptations in vertebrates and list out the economic importance.
		U23GZ27	Allied Zoology - II	**CO1**	Recall the parts and working of body organs and developmental stages, name the patterns of inheritance and list different types of animal behaviour
				CO2	Analyse the different developmental stages
				CO3	Analyse the working of body and immune systems
				CO4	Analyse the different patterns of inheritance
				CO5	Relate the behaviour of animals to physiology. Analyse the different types of behaviour
		U23SEZ5	Basics of Marine Biology	**CO1**	Define marine ecosystem, recognize and describe the interrelationship between biology and ocean technology.
				CO2	Articulate and classify the dynamics and the physical attributes of the ocean, interpret the factors which affect the global climate.
				CO3	Identify and analyze the physical and biological factors of marine environments, and focus life in the open sea.
				CO4	Evaluate the impact of variations in abiotic factors in marine productivity and justify the role of human activities in the degradation of marine ecosystems.
				CO5	Categorize marine pollutants and develop controlling measures in collaboration with the institutions for ocean management.
		U23SEZ6	Agricultural Entomology	**CO1**	Examine and identify the systemic and functional morphology of various group of agricultural insect pests.
				CO2	Explain the pest status in agriculture and control measures.
				CO3	List the economic importance of agricultural insect species.
				CO4	To compare the methods and outcomes of integrated pest management.
				CO5	Introduce the IPM methods to control the pests

		U23CZ5	Animal Physiology	**CO1**	Be able to explain how the various organ systems are coordinated and controlled.
				CO2	Be able to list the functions of various organs in relation to physiological process.
				CO3	Be able to develop the idea of multilevel controlling and feedback mechanism in relation to various physiological functions.
				CO4	Be able to understand the basic physiological process related to adaptation, metabolism and major requirements.
				CO5	be able to correlate and understand human physiology.
		U23CZ6P	Animal Physiology Practical	**CO1**	List and recall the basic equipment used in physiology and ecology lab and develop skill about quantitative determination of biomolecules and quantitative analysis of blood.
				CO2	Demonstrate the instruments, discuss the clinical importance and its applications, and explain the principle of bioinstruments.
				CO3	Understand and identify the chemical composition of major and minor nutrients and analyse Physio - chemical parameters that regulate metabolism.
				CO4	Evaluate and Examine the various parameters of haematology and biochemistry and Identify the nitrogenous waste products of animals.
				CO5	Summarise the effect of various physical and chemical factors on enzyme activity/. Compile the changes in various physiological parameters in man and other animals using various tools and techniques.
		U23GZ25	Allied Zoology – I	**CO1**	Recall the characteristic features invertebrates and chordates.
				CO2	Classify invertebrates up to class level and chordates up to order level
				CO3	Explain and discuss the structural and functional organisation of some invertebrates and chordates
				CO4	Relate the adaptations and habits of animals to their habitat
				CO5	Analyse the taxonomic position of animals.
		U23GZ26P	Allied Zoology Practical	**CO1**	Recall the characteristic features invertebrates and chordates.
				CO2	Classify invertebrates up to class level and chordates up to order level, structural and functional organisation of some invertebrates and chordates, adaptations and habits of animals to their habitat
				CO3	Recall the parts and working of body organs and developmental stages, name the patterns of inheritance and list different types of animal behavior and to analyse the different developmental stages
				CO4	Analyse the working of body and immune systems, understand the different patterns of inheritance

UZOE	B.Sc Zoology			**CO5**	Gain the knowledge on relationship the behaviour of animals to physiology. Analyse the different types of behaviour
		U23SEZ2	Biocomposting for Entrepreneurship	**CO1**	The students will gain knowledge about the process of Biocomposting.
				CO2	Students will be able to demonstrate Biocomposting techniques for various end applications like solid waste management, industrial waste recycling using sugarcane bagasse, etc.
				CO3	Acquiring knowledge on biocomposting pits
				CO4	Address about biocompost products
				CO5	To gain knowledge about the economic cost of establishing small Biocompost units as a cottage industry.
		U23SEZ7	Sericulture/NM Course	**CO1**	Understand the development of Sericulture in India and cultivation of mulberry plant.
				CO2	Distinguish the mulberry and non-mulberry silkworm and different stages of mulberry silkworm.
				CO3	Demonstrate the methods of rearing of silkworm and rearing appliances.
				CO4	Illustrate processing of cocoon and reeling operations.
				CO5	Differentiate the diseases of silkworm larva and infer information on raw silk.
		U23CZ7	Medical Lab Technology	**CO1**	Understand protocols and procedures to collect clinical samples for blood analysis and to study human physiology.
				CO2	Explain the characteristics of clinical samples.
				CO3	Demonstrate skill in handling clinical equipment.
				CO4	Evaluate the hematological and histological parameters of biological samples.
				CO5	Elaborate the role of medical laboratory techniques in health care industry.
		U23CZ8P	Medical Lab Technology Practical	**CO1**	List and recall the basic laboratory safety procedures, develop skills about handling chemicals and learn first-aid methods
				CO2	Examine and evaluate various parameters of blood and identify abnormalities related to blood
				CO3	Estimate and interpret changes in blood glucose and blood pressure.

				CO4	Understand and summarizethe disease-causing parasites and explain the functionality of bio instruments
				CO5	Demonstrate the method of tissue processing and identify tissue pattern & changes
		U23GZ27	Allied Zoology – II	**CO1**	Recall the parts and working of body organs and developmental stages, name the patterns of inheritance and list different types of animal behaviour
				CO2	Analyse the different developmental stages
				CO3	Analyse the working of body and immune systems
				CO4	Analyse the different patterns of inheritance
				CO5	Relate the behaviour of animals to physiology. Analyse the different types of behaviour
		U23SEZ8	Bioinstrumentation	**CO1**	To induce interest in the use of various biological instrumentation and employ them for the study of cells, tissues and genetic material.
				CO2	To help students to map the use of specific bioinstrumentation for specific biological experiments and infer the results of such experiments.
				CO3	To study the working principle of different bioinstrumentation and their applications.
				CO4	To enable students to design experiments and justify them with the underlying principles of bioinstrumentation.
				CO5	To acquire knowledge about molecular techniques
		U23SEZ9	Bioinformatics	**CO1**	understand the importance of Bioinformatics
				CO2	the biological databases available in the web
				CO3	retrieve the data available biological data
				CO4	know how to predict the structure of proteins
				CO5	apply the tools to design the drugs by docking
				CO1	Understand and appreciate the diversity of life and illustrate that fundamental structural units define the function of all living things.
				CO2	Describe, relate and summarize the structure and functions of cell organelles in the cell. Knowing the components of cells and how they work is fundamental to all biological sciences

		U23CZ9	Cell and Molecular Biology	**CO3**	Understand and familiarize the structure and functions of nuclear components. Discuss the cyclic events, types of cell division and distinguish between mitosis and meiosis.
				CO4	Analyze the structure and functions of DNA and RNA and their types in the cell. Discuss the mechanism associated with Gene expression and its regulation. Explain that the growth, development, and behavior of organisms are activated through the expression of genetic information in context.
				CO5	Summarize that biological systems grow and change by processes based upon chemical transformation pathways and identify social and historical dimensions of biological investigation. Define and identify different types of mutations and explain the causes of mutation.
		U23CZ10	Biochemistry	**CO1**	Acquire knowledge in biomolecule structure with respect to Carbohydrate.
				CO2	Be able to understand the Protein - classification, properties and biological importance.
				CO3	Be able to understand the Lipid - structure and classification.
				CO4	Be able to understand the Biological significance of Enzymes and Vitamins.
				CO5	Be able to understand the metabolic pathways of biomolecules.
		U23CZ11	Genetics	**CO1**	Understand the basis of inheritance and expression of genes.
				CO2	Correlate changes in genetic map and phenotypic changes in progeny.
				CO3	Analyse the causes of variations in cytogenetics
				CO4	Explain the role of cellular processes and different genetic elements human and microbial genes.
				CO5	Compile the factors which contribute to changes in gene expression and specify the changes which contribute to evolution.
		U23CZ12P	Cell and Molecular Biology, Biochemistry and Genetics Practical	**CO1**	Understand the basic techniques to work with cells and able to identify the various stages of mitosis.
				CO2	Understand and familiarize the structure and functions of nuclear components.
				CO3	Gain knowledge on biomolecules and their significances in the living system
				CO4	Understand the basis of inheritance and expression of genes.
				CO5	Understand various chromosomal aberrations and Karyotype in man
				CO1	Understand the fundamental structure and functions of the ecosystem.

		U23DZ05	Environmental Biology	**CO2**	Assess the inter-relationship between organisms and between biotic and abiotic factors in an ecosystem.
				CO3	Analyze the factors that cause pollution, climate change, loss of biodiversity and depletion of resources.
				CO4	Evaluate the impact of human population growth and socio-economic development on the structure and function of the ecosystem.
				CO5	Design plans to scientifically solve environmental problems using biological tools, technologies and government policies.
				CO5	Explain the advanced scientific basis for wildlife management and discuss National and International Efforts for successful wildlife conservation.
		U23DZ02	Wild Life Conservation and Management	**CO1**	Understand and discuss the importance of wildlife, its values, modern concepts in wildlife management, and relevant conservation policies.
				CO2	Assess and instill strong foundations on wildlife policies and be familiar with a variety of laws and regulations.
				CO3	Analyze and design appropriate approaches to turn conflict into tolerance and coexistence, with an emphasis on the human dimensions of human-wildlife interactions.
				CO4	Evaluate and integrate all the related areas like Fundamentals in Ecology, Forestry, Natural Resource Conservation approaches and develop the role PVA models for protection of Endangered species.
				CO5	Explain the advanced scientific basis for wildlife management and discuss National and International Efforts for successful wildlife conservation.
		U23CZ13	Microbiology	**CO1**	To understand history, relevance of microbiology and classification of bacteria
				CO2	To understand the principles and application of various microscopes to demonstrate proficiency in handling aseptic bacteriological specimen and to learn different methods of staining bacteria
				CO3	To gain knowledge of various fungi
				CO4	To understand the structure of bacterial cells, its organelles and physiology.
				CO5	To gain knowledge on morphology and pathogenesis of variou viruses.
		U23CZ14	Immunology	**CO1**	Understand and recall the basic structural and functional components of the immune system, compare and contrast cells with respect to origin and maturation.
				CO2	Classify and explain types of immunity, state the significance of antigen and examine their relevance to immunizations.
				CO3	Describe and differentiate the biological characteristics of the antibodies, analyze and formulate the procedure for antibody production
				CO4	Compare and rate the mechanism of various types of hypersensitivity reactions, assess and identify the different types of autoimmune diseases.

				CO5	Summarize immune responses against pathogens
		U23CZ15P	Microbiology & Immunology Practical	**CO1**	Handle the microscope, learn methods of sterilization and preparation of various culture media, purification techniques and staining techniques
				CO2	Learn to cultivate molds and yeasts and demonstrate their cultural characteristics. Assess viral infections
				CO3	Prepare antigen, count the blood cells and learn the precipitation reaction
				CO4	Acquire practical training for qualitative and quantitative analysis of antigen and antibody interactions.
				CO5	Gain knowledge about the various instruments in Immunology and Microbiology
		U23DZ06	Developmental Biology and Evolutionary Biology	**CO1**	To describe and illustrate the significance of cellular processes in embryonic development.
				CO2	To relate the factors that contribute to the developmental process and illustrate the steps in morphogenesis and organogenesis.
				CO3	To correlate the involvement of specific cell types in the formation of specific organs and explain the importance of morphogens and to understand the Primordial earth and theories on origin of life
				CO4	To integrate and assess Lamarckism - Neo Lamarckism – Darwinism and to analyse various fossil records of man
				CO5	To construct and compile the role of Human Genome Project, Evolution in the diagnosis, and treatment of diseases.
		U23DZ07	Animal Biotechnology	**CO1**	To describe the methodologies for handling animal cells based on their diverse characteristics and identify the correct biotechnological tools to obtain the desired products from the cells.
				CO2	To develop and explain the protocols for genetically manipulating cells and produce transgenic animals
				CO3	To select the apt molecular techniques to evaluate and analyze animal traits and diseases at the genomic level and devise methods for easy taxonomical identification and classification for biodiversity and environmental studies.
				CO4	To choose the correct methods of transgenesis and to consider their use in improving animal husbandry nationally and globally
				CO5	To speculate on the environmental implications of animal biotechnological methods and design responsible, ethical solutions to livestock production and health issues.
		U23PCZ1	Statistics for Biologists	**CO1**	Understand and recall the basic concepts, statistical data and formula.
				CO2	Apply suitable statistical methods to solve biological problems.
				CO3	Identify and relate the statistical principles for the application of biological experiments.

				CO4	To study the biological process and statistical approach to assess the experimental results.
				CO5	Integrate the statistical methods to validate research investigations.
		U23CB1	Plant Diversity I – Algae & Bryophytes	CO1:	Relate to the structural organization, reproduction and significance of algae.
				CO2:	Compare and contrast the thallus organization and modes of reproduction in algae.
				CO3:	Determine the emerging areas of Algal Biotechnology for identifying commercial potentials of algal products and their uses.
				CO4:	Explain the anatomy and reproduction of Bryophytes.
				CO5:	Compare and contrast the variations in the internal cellular organization, gametophyte and sporophyte of Bryophytes.
		U23CB2P	Plant Diversity I – Algae & Bryophytes Practical I	CO1:	Demonstrate practical skills in preparation of fresh mount and identification of algal forms from algal mixture.
				CO2:	Decipher the algal diversity in fresh/marine water and their economic significance.
				CO3:	Evaluate the various techniques used to culture algae for commercial purposes
				CO4:	Describe the structure of Bryophytes.
				CO5:	Identify and illustrate the morphological and anatomical features of bryophytes.
		U23SEB1	Organic farming	CO1:	Recognize the different forms of biofertilizers and their uses.
				CO2:	Explain and interpret the components, patterns, and processes of bacteria for growth in crop production.
				CO3:	Apply techniques for synthesizing green manure and develop strategies to increase crop yield.
				CO4:	Analyze and decipher the significance of biofertilizers in soil fertility.
				CO5:	Develop new strategies to enhance growth and quality check of medicinal herbs considering the practical issues pertinent to India.
				CO1:	Increase the awareness and appreciation of human friendly algae and their economic importance.
				CO2:	Develop an understanding of microbes and fungi and appreciate their adaptive strategies

		U23FB1	Basics of Botany	CO3:	Develop critical understanding on morphology, anatomy and reproduction of Bryophytes, Pteridophytes and Gymnosperms.
				CO4:	Compare the structure and function of cells and explain the development of cells.
				CO5:	Understand the core concepts and fundamentals of plant biotechnology and genetic engineering.
		U23 GB52	Allied Botany 1	CO1:	Increase the awareness and appreciation of human friendly algae and their economic importance.
				CO2:	Develop an understanding of microbes and fungi and appreciate their adaptive strategies
				CO3:	Develop critical understanding on morphology, anatomy and reproduction of Bryophytes, Pteridophytes and Gymnosperms.
				CO4:	Compare the structure and function of cells and explain the development of cells.
				CO5:	Understand the core concepts and fundamentals of plant biotechnology and genetic engineering.
		U23 GB53P	Allied Botany Practical	CO1:	To study the internal organization of algae and fungi.
				CO2:	Develop critical understanding on morphology, anatomy and reproduction of Bryophytes, Pteridophytes and Gymnosperms.
				CO3:	To study the classical taxonomy with reference to different parameters.
				CO4:	Understand the fundamental concepts of plant anatomy and embryology
				CO5:	To study the effect of various physical factors on photosynthesis.
		U23 GB54	Allied Botany II	CO1:	Understand the fundamental concepts of plant anatomy and embryology.
				CO2:	Analyze and recognize the different organs of plants and secondary growth.
				CO3:	Understand water relation of plants with respect to various physiological processes.
				CO4:	Classify aerobic and anaerobic respiration.
				CO5:	Classify plant systematics and recognize the importance of herbarium and virtual herbarium.
				CO1:	Understand and analyze different zones of environment and relates adaptations of plants to respective environment.

		U23 GB55	Introduction to Ecobiology	CO2:	Differentiate positive and negative interrogations
				CO3:	Understand relationship between biotic and abiotic components.
				CO4:	Develop concept on hydrosere and Xerosere. Causes and basic types of succession.
				CO5:	Enable students to carry out vegetation studies.
		U23 GB56P	Allied Environmental Biology practical	CO1:	Able to compare the distinguishing features of plants of various habitats.
				CO2:	Apply the knowledge of plant interaction and identify them with special features.
				CO3:	Develops the knowledge of locating parks and sanctuaries in the country.
				CO4:	Identify the types of forests and the products obtained from it.
				CO5:	Enable the students to study vegetation using quadrat method.
		U23 GB57	Basic Forest Botany	CO1:	Understands the different types of forests in India
				CO2:	Learns the components of social forest and Agroforests
				CO3:	Understands and compares the major and minor forest products
				CO4:	Enable the students to develop nursery and recognizes the forest conservation strategies
				CO5:	Develops keen interest in forest legislation and management
		U23CB3	Plant Diversity II – Fungi, Bacteria, Viruses, Plant Pathology and Lichens	CO1:	Recognize the general characteristics of microbes, fungi and lichens and disease symptoms.
				CO2:	Develop an understanding of microbes, fungi and lichens and appreciate their adaptive strategies based on structural organization.
				CO3:	Identify the common plant diseases, according to geographical locations and device control measures.
				CO4:	Analyze the emerging trends in fungal biotechnology with special reference to agricultural and pharmaceutical applications.
				CO5:	Determine the economic importance of microbes, fungi and lichens.

		U23CB4P	Plant Diversity II - Fungi, Bacteria, Viruses, Plant Pathology and Lichens – Practical II	CO1:	Identify microbes,fungi,and lichens using key identifying characters
				CO2:	Develop practical skills for culturing and cultivation of fungi
				CO3:	Identify and select suitable control measures for the common plant diseases.
				CO4:	Analyze the characterics of microbes,fungi,and plant pathogens.
				CO5:	Access the useful role of fungi in agriculture and pharmaceutical industry.
		U23SEB2	Mushroom Cultivation	CO1:	Recall various types and categories of mushroom.
				CO2:	Explain about various types of food technologies associated with mushroom industry.
				CO3:	Apply techniques studied for cultivation of various types of mushroom.
				CO4:	Analyze and decipher the environmental factors and economic value associated with mushroom cultivation
				CO5:	Develop new methods and strategies to contribute to mushroom production.
		U23SEB3	Botanical garden and Landscaping	CO1:	Recognize fundamental concepts of gardening and landscaping.
				CO2:	Explain about significance of garden adornments and propagation structures.
				CO3:	Apply techniques of landscaping for aesthetic purposes and gardening for recreation.
				CO4:	Distinguish between formal, informal and free style gardens and their applications.
				CO5:	Develop and design outdoor and indoor gardens and inculcate entrepreneurial skills for landscaping.
		U23CB5	Plant Diversity III – Pteridophytes, Gymnosperms & Paleobotany	CO1:	Recognize morphological variations of Pteridophytes.
				CO2:	Explain the anatomy and reproduction of Pteridophytes.
				CO3:	Decipher the stages of plant evolution and their transition to land habitat.
				CO4:	Explain about the morphology and anatomy Gymnosperms.

				CO5:	Determinethe various fossilization methods and their significance in paleobotany.
		U23CB6P	Plant Diversity III Pteridophytes, Gymnosperms & Paleobotany – Practical-III	CO1:	Recognize the major groups of Non-vascular and Vascular cryptogams
				CO2:	Describe the structure of Bryophytes and Pteridophytes forms prescribed in the syllabus.
				CO3:	Identify and illustrate the morphological and anatomical features of bryophytes and Pteridophytes.
				CO4:	Develop comprehensive skills in sectioning and micro preparation.
				CO5:	Interpret the significance of reproductive structures in gymnosperms.
		U23SEB4	Entrepreneurial Opportunities in Botany	CO1:	Relate to how various fields of botany could be understood with an entrepreneurial approach.
				CO2:	Explain the concept of Entrepreneurial Opportunities in Botany.
				CO3:	Make of the knowledge gained to start new venture using Plant tissue culture and plant products for commercial exploitations
				CO4:	Decipher effective ways of making bioproducts like organic acids, solvents, beverages, enzymes, antibiotics, mushrooms, biogas and etc.
				CO5:	Develop new strategies to describe marketing and business management strategy including the role of IPR and bioethics regulations for licensing.
		U23SEB5	Herbal Technology	CO1:	Define and describe the principle of cultivation of herbal products.
				CO2:	List the major herbs, their botanical name and chemical constituents.
				CO3:	Apply techniques for monitoring drug adulteration through the biological testing.
				CO4:	Analyze and decipher the significance of various methods of harvesting, drying and storage of medicinal herbs.
				CO5:	Develop the skills for cultivation of plants and their value added processing / storage
		U23CB7	Cultivation of Algae	CO1:	1. Obtain an in-depth knowledge on culture and mass cultivation of algae and its different methods.
				CO2:	2. Exploration and recommendation of the commercial potential of algal products.
				CO3:	3. Understand the applied facet of algology and acquire a complete knowledge about the cultivation methods in algae.

				CO4:	4. Describe the preparation of seaweed liquid fertilizers and their applications in agriculture and horticulture.
				CO5:	5. Acquiring the information about algal applications in different industries and agriculture fields in the current scenario.
UBOE	B.Sc. Botany	U23CB8P	Cultivation of Algae – Practical-IV	CO1:	1. Obtain an in-depth knowledge on culture and mass cultivation of algae and its different methods.
				CO2:	2. Exploration and recommendation of the commercial potential of algal products.
				CO3:	3. Understand the applied facet of algology and acquire a complete knowledge about the cultivation methods in algae.
				CO4:	4. Describe the preparation of seaweed liquid fertilizers and their applications in agriculture and horticulture.
				CO5:	5. Acquiring the information about algal applications in different industries and agriculture fields in the current scenario.
		U23SEB6	Fermentation Technology	CO1:	Enumerate the significance of industrially useful microbes.
				CO2:	Explain the design and operation of industrial practices in mass production of fermented products.
				CO3:	Explain the process of maintenance and preservation of microorganisms.
				CO4:	Analyze the various aspects of the fermentation technology and apply for fermentative production.
				CO5:	Validate the experimental techniques for microbial production of enzymes: amylase and protease, bio product recover.
		U23SEB7	Environmental Impact Analysis	CO1:	Enumerate the fundamental concepts and significance of environmental impact assessment.
				CO2:	Explain the important steps of EIA process.
				CO3:	Interpret the environmental appraisal and procedures in India.
				CO4:	Decipher how to prepare the various documents required by state and federal regulations.
				CO5:	Develop their own perspectives on impact assessment and be able to solve problems related to environment.
				CO1:	Define the concepts in plant morphology and rules of IUCN in botanical nomenclature.
				CO2:	Classify systems of plant classification and recognize the importance of herbarium and virtual herbarium.

		U23CB9	Plant Morphology, Taxonomy and Economic Botany	CO3:	Describe the core concepts of economic Botany and relate its applications in human life.
				CO4:	Analyze the characters of the families according to the Bentham and Hooker's system of classification.
				CO5:	Assess terms and concepts related to Phylogenetic systematics.
		U23CB10	Plant Anatomy, Embryology & Evolution	CO1:	Relate to the fundamental concepts of plant anatomy and embryology.
				CO2:	Describe the internal tissue organization of various plant organs.
				CO3:	Elucidate the stages of normal and abnormal secondary growth.
				CO4:	Compare the structural organization of flower in relation to the process of pollination and fertilization.
				CO5:	Determine the various fossilization methods
		U23CB11P	Plant Morphology, Taxonomy, Economic Botany, Plant Anatomy, Embryology and Evolution - Practical-V	CO1:	Recognize the distinguishing plant morphological characters.
				CO2:	Identify locally available plants to their respective families.
				CO3:	Develop comprehensive skills in field identification, collection of specimens, writing technical description, botanical drawings and herbaria preparation.
				CO4:	Enumerate the structure and functions of cells, cellular structures and organelles.
				CO5:	Describe the structure of fossil forms prescribed in the syllabus.
		U23CB12	Plant Ecology and Phytogeography	CO1:	Relate to the significance of the biotic and abiotic components of the ecosystems and energy flow.
				CO2:	Summarize the phytogeographical division of India.
				CO3:	Explain the implication of pollution on the environment.
				CO4:	Analyze the implications of functional and behavioral ecology in natural and man-made areas, biodiversity and conservation.
				CO5:	Develop mitigations for the effective conservation of biodiversity and disaster management.
				CO1:	Identify skills and capabilities that intersect effectively with the needs of the industry.

		U23 SIB1	Summer Internship /Industrial training	CO2:	Apply and practice various soft skills in a variety of professional contexts.
				CO3:	Identify personal attributes and construct the required profile demonstrating the necessary employability attributes.
				CO4:	To improve the understanding of the experiences,challenges and opportunities of the real world of work.
				CO5:	To facilitatae the development of problem-solving and decision-making skills and to promote reserch, academic and professional developments.
		U23CB13	Plant Physiology and Plant Biochemistry	CO1:	Relate to water relation of plants with respect to various physiological phenomenon.
				CO2:	Explain the process and significance of photosynthesis and respiration.
				CO3:	Elucidate properties of nutrients and their deficiency symptoms in plants.
				CO4:	Analyze the biological role of plant growth regulators, carbohydrates, proteins, lipids, nucleic acids and enzymes.
				CO5:	Decipher the phenomenon of seed dormancy and germination in plants.
		U23CB14	Plant Biotechnology and Molecular Biology	CO1:	Recognize the fundamentals concepts of plant biotechnology and genetic engineering.
				CO2:	Explain various steps in transcription, protein synthesis and protein modification.
				CO3:	Elucidate gene cloning and evaluate different methods of gene transfer.
				CO4:	Analyze the major concerns and applications of transgenic technology.
				CO5:	Develop their competency on different types of plant tissue culture.
		U23CB15P	Plant Physiology, Plant Biochemistry, Plant Biotechnology and Molecular Biology - Practical-VI	CO1:	Relate to the distribution and adaptions of plants pertaining to their habitat
				CO2:	Demonstrate skills in green planning and callus culture.
				CO3:	Elucidate the basic principles involved in the plant physiology and biochemistry experiments.
				CO4:	Appreciate the structure and functions of DNA and RNA.
				CO5:	Estimate the biochemical components and determine the factors controlling photosynthesis and transpiration of plants.

		U23PCB1	Professional Competency Skill – Botany for Competitive Examinations	CO1:	Identify and define different groups of plants with their taxonomic position. Compare the different groups of plants and evaluate their economic importance.
				CO2:	List down the general characters of Bryophytes, Pteridophytes and Gymnosperms Classify the types of fossils and recognize the fossil beds of Tamil Nadu. Analyse and trace the origin of different plant groups using Geological Time scale.
				CO3:	Appreciates the morphology of plant and analyse different modifications of plant organs. Explore the major Herbaria of the world and recognize the importance.
				CO4:	Differentiate Prokaryotic and Eukaryotic cell. Evaluate the significance of cell division. Justify the cause for the sex linked inheritance. Tabulate the different cell organelles with their functions.
				CO5:	Define and appreciates biodiversity. Identify the cause and solve environmental related issues. Design eco friendly approaches to protect earth and generate new conservation strategies.
		U23DB01	Bio-analytical Techniques	CO1:	Relate to the various biological techniques and its importance.
				CO2:	Explain the principles of Light microscopy, compound microscopy, Fluorescence microscopy and electron microscopy.
				CO3:	Apply suitable strategies in data collections and disseminating research findings.
				CO4:	Compare and contrast the significance of different types of chromatography techniques.
				CO5:	Develop methodologies for extraction and analysis of biochemical compounds.
		U23DB02	Aquatic Botany	CO1:	Recognize aquatic plants and their ecological importance.
				CO2:	Explain about commonly occurring marine and limnetic algae of the Indian coasts.
				CO3:	Apply techniques for conservation of aquatic plants for value addition.
				CO4:	Analyze and decipher the significance and properties of mangroves, other aquatic angiosperms and microalgae.
				CO5:	Develop new strategies to conserve mangroves and device innovative methods for cultivation of aquatic plants.
		U23DB04	Forestry	CO1:	Relate to the basic concepts related to forest distribution, degradation, protection, management and resource utilization.
				CO2:	Understand complex interactions of humans and forest ecosystems in a global context.
				CO3:	Demonstrate skills for ecological measurements and interpretation of forest ecology management.
				CO4:	Examine and decipher the factors influencing forest vegetation, forest degradation and methods of wood preservation

				CO5:	Develop new strategies and apply the knowledge gained for problem-solving analysis in the conservation and management of forest ecosystems.
		U23DB05	Computer Applications in Botany	CO1:	1. Recognize advanced resources for accessing scholarly literature from the internet.
				CO2:	2. Explain the concept of databases and use of different public domain for DNA and proteins sequence retrieval.
				CO3:	3. Apply various software resources with advanced functions to carry out analysis of data procured through research.
				CO4:	4. Decipher the effective utilization of bibliography management software while typing and downloading citations.
				CO5:	5. Determine how the knowledge gained can be used for designing experiments and data interpretation.
		U23DB06	Horticulture	CO1:	Enumerate the concepts in horticulture and nursery management.
				CO2:	Demonstrate a working knowledge on biology of soil, compost making, designing and planning of garden, pest, diseases and nutrient management practices.
				CO3:	Appraise the importance of floriculture and evaluate the contribution of spices and condiments on economy.
				CO4:	Analyze different methods of weed control in horticultural crops.
				CO5:	Develop their competency on pre and post-harvest technology in horticultural crops.
		U23DB07	Natural Resource Management	CO1:	Relate to significance of natural resources pertaining to economy and environment
				CO2:	Understand the concept of different natural resources and their utilization.
				CO3:	Evaluate the management strategies of different natural resources.
				CO4:	Critically analyze the sustainable utilization land, water, forest and energy resources.
				CO5:	Design new models of natural resource conservation and maintenance.
		U23DB08	Forensic Botany	CO1:	Recognize morphological and anatomical features of plants, which could be useful for forensic investigations.
				CO2:	Summarize the forensic importance of different parts of plants.
				CO3:	Apply techniques for the collection and preserve of botanical evidences of crime.

				CO4:	Analyze and decipher the significance of classic and DNA based forensic botany cases.
				CO5:	Interpret and deduce new methods for the detection of plant poisons used in crime.
		U23DB09	Bionanotechnology	CO1:	Relate to the essential features of biology and nanotechnology that are converging to create the new area of bionanotechnology
				CO2:	Explain the synthesis of nanomaterials and their applications.
				CO3:	Apply the knowledge gained to develop nanomaterials
				CO4:	Compare the advantages and disadvantages of nanoparticles in health, medicine and environment.
				CO5:	Construct various types of nanomaterial for application and evaluate the impact on environment.
		U23CG1	FUNDAMENTALS OF GEOMORPHOLOGY	CO1 To understand scope and content of Geomorphology; and explains the Rocks and types of rocks	
				CO2 To Explains the Continental Drift Theory, classify Endogenic and Exogenic forces. Discuss the Fold, F	
				CO3 To illustrate the factors affecting weathering and its types	
				CO4 To compare and classify Glacier and its types and types of landforms	
				CO5 To explain the work of wind waves	
		U23CG2P	MAP MAKING AND REPRESENTATION OF RELIEF	CO1 To understand the components of Maps and Scale Measurements	
				CO2 To illustrate and examine the Representation of the direction on Maps	
				CO3 To Measure the distance on maps by using different methods	
				CO4 To enhance techniques applied in the Enlargement and reduction of maps	
				CO5 To introduce the mapping techniques applied to interpret contours	
				CO1 To understand the components of Maps and Scale Measurements	
				CO2 To illustrate and examine the Representation of the directionon Maps	

		U23SEG1	MAPPING TECHNIQUES	CO3 To understand Latitude and Longitude and calculate International dateline
				CO4 To elaborate on the need for conventional signs and symbols in Maps
				CO5 To enhance techniques applied in the Representation of relief on maps
		U23FG1	EARTH AND ITS SYSTEMS	CO1 To understand the basic concept of Universe and its origin and the theories of Evolution : Nebula, Kant
				CO2 To understand Earth and Universe- Solar systems , Milky way Galaxy and Black hole theory and Mete
				CO3 To explain the Earth Internal Structure the Core, Mantle, Crust
				CO4 To illustrate about the Earth's Size, Rotation and Revolution, causes for Seasons, Eclipses and Solstice
				CO5 To explain the latitude and longitude, Cardinal points, Greenwich Meridian and Indian Standard Time.
		U23CG31	CLIMATOLOGY	CO1 To understand the basic concepts and scope of climate and differentiate the weather and climate and as
				CO2 To understand the Insolation and Temperature, Factors and Distribution, Heat Budget, Temperature Inv
				CO3 To classify the Atmospheric Pressure and Winds
				CO4 To illustrate the types of air masses and fronts
				CO5 To elaborate the Atmospheric Moisture and climatic regions
		U23CG4P	CLIMATIC DATA AND WEATHER MAP INTERPRETATION	CO1 To understand the representation of Climatic Data
				CO2 To illustrate the Symbols used to interpret the Weather maps
				CO3 To understand Weather Maps and Instruments- Weather Elements on map Meteorological signs and sy
				CO4 To Study Procedures of interpretating Indian Daily Weather maps
				CO5 To interpret the Indian daily weather map
				CO1 To acquire basic knowledge on the social structure and society

		U23SEG2	SOCIAL AND CULTURAL GEOGRAPHY	CO2: To elaborate the spatial distribution of Ethnicity
				CO3:To discuss the social welfare and well being
				CO4:To distinguish on the races and cultural diffusion of the world
				CO5:To assess the Human development indicators and its Index
		U23SEG3	GEOGRAPHY OF TOURISM	CO1 To acquire basic knowledge on the social structure and society
				CO2 To elaborate the spatial distribution of Ethnicity
				CO3: To discuss the social welfare and well being
				CO4: To distinguish on the races and cultural diffusion of the world
				CO5: To assess the Human development indicators and itsIndex
		U23CG5	CARTOGRAPHY	CO1 To understand the development and history of Cartography, with the types of maps.
				CO2 To illustrate and examine the components of Maps.
				CO3 To elaborate on the representation of mapping techniques.
				CO4: To enrich the development of remote sensing in the cartography.
				CO5: To summarize the recent technologies in digital Cartography
		U23CG6P	STATISTICAL MAPS AND DIAGRAMES	CO1: To understand the development of Cartography, with the types of graphs
				CO2: To illustrate and examine the components of Diagrams
				CO3: To elaborate on the representation of mapping techniques.
				CO4: To enrich the development of diagrams in the cartography
				CO5: The recent techniques in locational diagrams

		U23GG31P	STATISTICAL APPLICATIONS FOR GEOGRAPHY	CO1: Understands the Purposes of data collection and its sources
				CO2: Sampling is very essential to choose according to the types of data types and the purpose of the study
				CO3: Understands of facts of hypothesis testing and need of hypotheses in research analysis
				CO4: Explore the types of hypothesis and its significance and confidence level.
				CO5: Examine the relationship between Parametric and Non-parametric procedures through Chi-square test.
		U23SEG4	PREPARATION OF CHART FOR RURAL AND URBAN ACTIVITIES	CO1: To acquire the basic knowledge of Rural & Urban Activities
				CO2: To understand the need of basic services in Rural areas in the way of rural land use
				CO3: To get the knowledge of urban areas in the form of urban land use.
				CO4: To explore the basic knowledge of services and functions to represented in the form of charts.
				CO5: To enrich the development of charts in cartography.
		U23SEG5	GEOGRAPHY OF HEALTH	CO1: To understand the relationship between health and geography and the driving force of health and envir
				CO2: To recall the history of disease and elaborate on the agents of disease
				CO3: To illustrate the components of the influencing environment on health
				CO4: To differentiate the types of diseases like communicable and non-communicable diseases
				CO5: To elaborate on the health care planning and management of the World and India
		U23CG7	ECONOMIC GEOGRAPHY	CO1: To recall the Scope and content of Economic Geography and observe the Resource classification
				CO2: To examine the factors of agriculture and to describe the distribution of Crops.
				CO3: To differentiate and classify the Mineral Resources and distribution of Power Resources
				CO4 To Compare and distinguish the Industries and Industrial Regions.

UGEE	B.Sc Geography			CO5 To infer and integrate the transport and major importing and exporting trade
		U23CG8P	COMPUTER ASSISTED DIAGRAMS	CO1 To understand the development of Cartography, with the types of graphs
				CO2 To illustrate and examine the components of Diagrams
				CO3: To elaborate on the representation of mapping techniques.
				CO4: To enrich the development of diagrams in the cartography
				CO5: The recent techniques in locational diagrams
		U23SEG6	BASICS OF GEOGRAPHICAL INFORMATION SYSTEM	CO1 To understand the development and history of Cartography, with the types of maps
				CO2 To illustrate and examine the components of Maps.
				CO3 To elaborate on the representation of mapping techniques
				CO4 To enrich the development of remote sensing in the cartography
				CO5 To summarize the recent technologies in digital Cartography
		U23SEG7	BIO GEOGRAPHY	CO1 To understand the content of Bio-Geography and components of biosphere
				CO2: To identify elements and types of biodiversity
				CO3: To illustrate the different types of Biomes of India.
				CO4: To understand the ecosystem balance and biosphere reserves
				CO5: To elucidate the association between biodiversity and sustainable development.
		U23CG9	OCEANOGRAPHY	CO1: To understand the term Ocenography definition, description of Ocean and Seas, Extent, surface config
				CO2: To understand and illustrate on bottom relief of Pacific, Atlantic and Indian Ocean and Composition o
				CO3: To illustrate the distribution of Salinity and factors affecting temperature

				CO4: To describe the Circulation of Ocean Movements
				CO5: To explain the distribution of Ocean deposits and resources
		U23CG10	WORLD REGIONAL GEOGRAPHY	CO1 To understand the term region definition, description of natural vegetation, landforms associated with a
				CO2: To acquire wide knowledge on world regions
				CO3: To explain the warm regions and china type
				CO4: To understand and illustrate on warm temperate regions, Mediterranean regions
				CO5: To describe the cool temperate and polar region.
		U23CG11P	MAP MAKING AND MAP INTERPRETATION	CO1 To understand the term map making
				CO2 To acquire wide knowledge on cartographic appreciation
				CO3 To understand and illustrate on US topographical maps
				CO4 To describe the aerial photographs with stereo pairs.
				CO5 To assess the Remote sensing data with satellite imageries
		U23CG12	GEOGRAPHY OF TAMILNADU	CO1 To Identify the location, Relief, Drainage, Climate, Types of Soils and Forest of Tamil Nadu
				CO2 To Examine the distribution of various forests, livestock and fisheries in Tamil Nadu
				CO3 To Analyse the irrigation and agricultural resources in Tamil Nadu
				CO4 To Knowledge about the different types mineral and industrial resources in Tamil Nadu
				CO5 To Understand the growth, distribution of population of Tamil Nadu and the various kinds of transpo
				CO1 Recall the Nature and Scope of Human geography, compare with the other branch of Geography , Und
				CO2 Understands the basis of the study of Geography through the elaborate understanding of the School o

		U23DG01	HUMAN GEOGRAPHY	CO3 Explain the distribution of Major human races in the world, compare World Distribution of Races, analyse Racial parameters and indices(Shape, Skull, Face, Nose, Stature,, examine White (Caucasian), Classifying Asian(Mongoloid), outline the Black(Negroid Group discussion Classification of Races
				CO4 Recall the Major Religions, explain Hinduism, Buddhism, Jainism, Christianity, Islam, examine the Re
				CO5 Estimate the distribution of Language groups (Chinese, Spanish, English, Hindi, Arabic German, Fren
		U23DG02	WATER RESOURCE MANAGEMENT	CO1 To understand the basic concepts of resource Geography and assess the relationship between surface w
				CO2 To elaborate the understanding about water storage, moisture etc
				CO3 To discuss the distribution of water uses of domestic and irrigation
				CO4 To illustrate the problems of water resources.
				CO5 To distinguish the World conversion and planning of water resources
		U23DG03	RESEARCH METODOLOGY	CO1: To elaborate the need for research and its types
				CO2: To elucidate the different types of data collection in the field of Geography
				CO3: To have empirical knowledge on hypothesis testing.
				CO4: To assess the need for quantitative techniques in Geographical Research.
				CO5: To design the research proposal and methodological procedures to conduct the research
		U23DG04	POLITICAL GEOGRAPHY	CO1: To acquire basic knowledge on the Political Geography
				CO2: To elaborate the spatial distribution of Core Areas of Political Geography
				CO3: To discuss the importance of Boundaries and Frontiers
				CO4: To elaborate on Geography of Elections
				CO5: To illustrate the Political Geography of India
				CO1: To elaborate on the Location and Physiography of India

		U23CG13	GEOGRAPHY OF INDIA	CO2: To understand the climate and soil distribution of India
				CO3: To illustrate the agricultural distribution of India and the need for geographical factors for crop produc
				CO4: To distinguish the metallic and non metallic minerals, and understand the distribution of Indian Indust
				CO5: To elaborate the distribution of population and transport in India
		U23CG14	POPULATION AND SETTLEMENT GEOGRAPHY	CO1 To Enrich the knowledge on Scope and Significance of Population Geography
				CO2 To illustrate on the Components of Demography
				CO3 To elaborate on Rural and Urban Settlements
				CO4 To understand the Functional classification of towns and villages
				CO5 To acquire knowledge on Housing and House Types, Factors influencing house types.
		U23CG15P	PROJECTION AND SURVEYING	CO1 To acquire the knowledge of Conical Projection
				CO2 To get the knowledge of properties of cylindrical projection
				CO3 To get depth knowledge to construct international projection and Choice of Projection
				CO4 To acquire the basic knowledge of survey techniques
				CO5 To get the knowledge of recent trends in Geographical Applications
		U23DG05	REMOTE SENSING AND GNSS	CO1 To have basic knowledge on basics of Remote sensing
				CO2 To elaborate on the fundamentals and significance of Aerial photographs and satellite types
				CO3 To have the deep knowledge on the types of resolution and marginal information of Aerial photos and s
				CO4 To explore the application of Remote sensing
				CO5 To have wide understanding on GNSS, Segments and Satellite tracking

		U23DG06	GEO SPATIAL TECHNIQUES	CO1 To acquire basic knowledge and Scope of Geoinformatics	
				CO2 To elaborate the sources of Spatial database	
				CO3 To discuss the importance of Software Sources and methods of acquiring Geo data	
				CO4 To elaborate on GIS and Spatial Decision Support	
				CO5 To illustrate the Application of Geo spatial data.	
		U23DG07	TRANSPORT GEOGRAPHY	CO1 To acquire basic knowledge and Scope of Transport Geography	
				CO2 To elaborate the Types of Transport	
				CO3 To discuss the importance of Network Characteristics of transport	
				CO4 To elaborate on Theories related to freight rate structure	
				CO5 To illustrate the Transport system in India	
		U23DG08	REGIONAL PLANNING AND DEVELOPMENT	CO1 To acquire the conceptual and theoretical framework of Region	
				CO2 To Distinguish between the Physical regions, resource regions	
				CO3 To assess the approaches to delineation of different types of regions and their utility in planning	
				CO4 To illustrate the Regional development strategies	
				CO5 To differentiate the Concept of Multi-level planning	
		U23CN1	**FOOD SCIENCE**	**CO1**	Define nutrients and terms related to nutrition.
				CO2	Describe the sources, recommended allowances of macronutrients, micronutrients, and water.
				CO3	Interpret the significance of macro and micronutrients, and water for maintenance of optimum health.
				CO4	Explain the functions, deficiency or toxicity of macro and micronutrients, and water.

				CO5	Evaluate the role of macronutrients, micronutrients, and water in health and disease.
		U23CN2P	**BASIC COOKERY PRACTICAL**	**CO1**	Identify appropriate methods for weighing dry and wet food ingredients and for cooking different foods.
				CO2	Select suitable methods for cooking cereals, pulses, vegetables, meat, fish and Poultry.
				CO3	Apply the principles of cookery, cooking techniques and suitable ingredients in preparing dishes
				CO4	Explain the reasons behind the changes that occur during food preparation.
				CO5	Justify the best preparation and cooking methods for acceptability and retention of nutrients in different dishes
		U23CN3	**HUMAN NUTRITION**	**CO1**	Define nutrients and terms related to nutrition.
				CO2	Describe the sources, recommended allowances of macronutrients, micronutrients, and water.
				CO3	Interpret the significance of macro and micronutrients, and water for maintenance of optimum health.
				CO4	Explain the functions, deficiency or toxicity of macro and micronutrients, and water.
				CO5	Evaluate the role of macronutrients, micronutrients, and water in health and disease
		U23CN4P	**FOOD PREPARATION PRACTICAL**	**CO1**	Apply principles of cooking to various food groups and Preservation techniques.
				CO2	Develop skills techniques in Continental dishes and Indian dishes
				CO3	Display the acquired skills in food preparation and service.
				CO4	Develop skills and techniques in preparation of tandoor and its related products
				CO5	Develop skills and techniques in preparation of international cuisine.
		U23CN5	**FOOD PRODUCTION AND SERVICE**	**CO1**	Identify and differentiate the types of food service sectors.
				CO2	Develop skills to formulate and standardize recipes from various cuisines.
				CO3	Demonstrate skills in quantity food production.

				CO4	Distinguish various styles of service and identify the basic technical skills, and interpersonal skills required for food service.
				CO5	Identify entrepreneurial ventures in food production and service.
		U23CN6P	**FOOD PRESERVATION PRACTICAL**	**CO1**	Define and explain the principles of food preservation and relate the role of microorganism in food spoilage.
				CO2	Explain the cause of food spoilage, need and principles of food preservation.
				CO3	Apply the various techniques of food preservation preserve different foods so as to increase the shelf life of foods.
				CO4	Compare the principles and techniques of various food preservation methods and explain the role of packaging in food processing.
				CO5	Justify the use of various preservation techniques, and packaging materials describe the terms relate to food preservation and classify foods based on the shelf life.
		U23CN7	**NUTRITION THROUGH LIFE CYCLE**	**CO1**	Explain the physiological basis for nutritional needs through the human lifecycle
				CO2	Identify nutrition related concerns and deficiency disorders at every stage of lifecycle
				CO3	Discuss appropriate dietary guidelines for various age groups
				CO4	Develop indigenous, value added and low cost complementary feeds
				CO5	Demonstrate skills to plan and prepare appropriate and sustainable diets for deficiency diseases
		U23CN8P	**NUTRITION THROUGH LIFE CYCLE PRACTICAL**	**CO1**	Explain the physiological basis for nutritional needs through the human lifecycle
				CO2	Identify nutrition related concerns and deficiency disorders at every stage of lifecycle
				CO3	Discuss appropriate dietary guidelines for various age groups
				CO4	Develop indigenous, value added and low cost complementary feeds.
				CO5	Demonstrate skills to plan and prepare appropriate and sustainable diets for deficiency diseases
				CO1	Apply the principles, tools of management to ensure for effective functioning of organization.
				CO2	Develop the manaerial skills to select, train, appraise human resources.

		U23CN9	**FOOD SERVICE MANAGEMENT**	**CO3**	Recognize the use and operation of equipment and acquire skills in the selection of equipment, sketch sample lay out of the food service units.
				CO4	Evaluate and implement food safety and environmental sanitation in the workspace
				CO5	Use the basic concept of bookkeeping and elements of cost to assess the financial viability of the organization.
		U23CN10	**DIETETICS**	**CO1**	Explain concepts of diet therapy and role of dietitian.
				CO2	Identify the etiology symptoms and principles of dietary management for various diseases.
				CO3	Apply the principles of dietetics to plan therapeutic diets for various disease conditions.
				CO4	Examine the physiological condition of the individual and explain the role of food and diet in treating that condition.
				CO5	Summarize the causes, symptoms of a disease/ disorder and design a suitable diet plan using principles of nutritional management and recommended dietary allowances.
		U23CN11P	**DIETETICS PRACTICAL**	**CO1**	List the principles of dietary management for various conditions.
				CO2	Calculate the nutrient content of the diet for various conditions and compare it. with the recommended allowances
				CO3	Apply the principles of dietary management in planning diets for various conditions.
				CO4	Justify choice of foods, preparation methods, content, and consistency for different disease conditions
				CO5	Plan and prepare diets for various disease conditions.
		U23CN12	**HOME SCIENCE EXTENSION EDUCATION**	**CO1**	Describe key concept of Home Science Extension Education
				CO2	Explain Diffusion and Adoption of Innovations
				CO3	Understand the criteria for Communication process
				CO4	Identify importance and Planning teaching and learning
				CO5	Introduction to Current approaches in extension education
				CO1	Describe the meaning and principles of Growth & Development

		U23CN13	**HUMAN DEVELOPMENT**	**CO2**	Explain developmental aspects during infancy, early and late childhood.
				CO3	Evaluate developmental aspects during adolescence.
				CO4	Identify the developmental tasks during adulthood and old age.
				CO5	Introduction to Children with Special Needs and identification & Educational Rehabilitation
		U23CN14	**FIBER TO FABRIC**	**CO1**	Describe the essential properties of textile fibers, yarns and the basic fabric construction techniques
				CO2	Explain the manufacturing process of man-made fibers, yarn construction and fabric construction.
				CO3	Classify textile fibers, yarns and fabrics.
				CO4	Categorize the fibers, yarns and fabrics for its appropriate end use.
				CO5	Assess the sequence of developing fibers into yarns and fabric
		U23NPW	**PROJECT**	**CO1**	Develop a research design on a topic relevant to their field
				CO2	Prepare a systematic literature review on the topic selected
				CO3	Select and execute the most appropriate methodology for the studyand provide justification for the choice made.
				CO4	Acquire skill in collecting, analyzing, presenting and interpreting data accurately.
				CO5	Present findings of the study in a logical and sequential manner and discuss them against a backdrop of available scientific literature; Cite references in prescribed format and conduct plagiarism check on the document prepared.
		U23GN32	**NUTRITIONAL BIOCHEMISTRY**	**CO1**	Describe the role of enzymes and coenzymes in biological oxidation.
				CO2	Explain metabolism and regulation of carbohydrate, lipids and proteins
				CO3	Analyze the integration of carbohydrate, lipid and protein metabolism
				CO4	Comprehend the significance of recent biochemical concepts namely xenobiotics, recombinant DNA technology and Nutrigenomics.
				CO5	Discuss the structure and functions of nucleic acids.

UHSE	**B.Sc. Home Science (NFSMD)**	**U23GN33P**	**NUTRITIONAL BIOCHEMISTRY PRACTICAL**	**CO1**	Demonstrate the skills in qualitative testing of sugars
				CO2	Exhibit skills in performing qualitative tests of protein, amino acids and minerals
				CO3	Show dexterity in estimating the quantity of reducing sugar
				CO4	Display skill in estimation of vitamin C in different foods using Colorimeter
				CO5	Estimate the quantity of iron and phosphorus in foods
		U23GN34	**FOOD MICROBIOLOGY**	**CO1**	Summarize the general characteristics of microorganisms
				CO2	Identify and apply techniques to control microbes
				CO3	Recognize microbial spoilage in various foods
				CO4	Distinguish food borne infections and intoxication and apply quality control measures
				CO5	Explain the beneficial role of microbes in foods
		U23DN01	**HUMAN PHYSIOLOGY**	**CO 1**	Describe the structure and functions of a cell, various tissues, primary organs and systems in the body.
				CO 2	Explain the interrelationship between systems for maintenance of equilibrium
				CO 3	Evaluate the role of the nervous and endocrine system in regulating the activities of other systems
				CO 4	Identify the microscopic structure of basic tissues, label the parts of primary physiological systems in the body such as nervous, respiratory, digestive, endocrine and reproductive systems
				CO 5	Perform haematological study of blood such as blood smear, blood count and blood grouping, record pulse, blood pressure and interpret a normal ECG.
		U23DN02	**SPORTS NUTRITION**	**CO 1**	Define terms related to physical fitness, nutrients and supplements for exercise.
				CO 2	Discuss the benefits of different exercise, significance of body weight and composition parameters, fuel system, nutrients, supplements and ergogenic aids for exercise.
				CO 3	Explain the significance of body composition parameters, fuel systems, energy pathways and utilization of nutrients, sports supplements and ergogenic aids for exercise.
				CO 4	Analyze the role of energy pathways, macro and micronutrients, sports supplements and ergogenic aids used by athletes to improve performance.

				CO 5	Assess the functions of nutrients before, during and after exercise, and recommend meal plans for athletes involved in different sports.
		U23DN03	**PUBLIC HEALTH NUTRITION**	**CO1**	Define terms related to Public Health nutrition.
				CO2	Describe the nutritional problems prevalent in the community.
				CO3	Explain the significance of assessment of nutritional status.
				CO4	Assess the role of various organizations in combating nutritional problems.
				CO5	Conduct nutrition education programs to create awareness on improving health and nutrition of the community at large.
		U23DN04	**FUNCTIONAL FOODS FOR CHRONIC DISEASES**	**CO1**	Define functional foods and recall the components of functional foods and their health benefits.
				CO2	List out different functional foods, properties, and their functions.
				CO3	Explain the impact of functional foods in the prevention and management of CVD and kidney diseases.
				CO4	Evaluate the role of functional foods in the prevention and management of cancer.
				CO5	Summarize the role of functional foods in the prevention and management of obesity and type 2 diabetes mellitus.
		U23DN05	**PRINCIPLES OF RESOURCE MANAGEMENT**	**CO1**	Apply the principles of management process in day-to-day life
				CO2	Identify and analyze the need for resources
				CO3	Utilize tools of time management effectively in day-to-day life
				CO4	Apply work simplification techniques while managing work.
				CO5	Develop good decision-making skills and plan a budget within the available income and to maintain accounts.
		U23DN06	**FAMILY DYNAMICS**	**CO1**	Describe key elements of family dynamics across a range of family issues
				CO2	Explain Family Patterns and Relationships
				CO3	Understand the main content and concepts of marriage

				CO4	Identify family roles and explain theoretical Perspectives and Ecology of Parent Child Relations
				CO5	Introduction to Significant contemporary issues and concerns regarding family crisis
		U23DN07	**FOOD PACKAGING**	**CO1**	Summarize the functions and properties of food packaging
				CO2	Compare and assess different food packaging materials
				CO3	Distinguish various food packaging methods and performances
				CO4	Identify suitable packaging methods and materials for different foods
				CO5	Integrate knowledge on food laws and standards with consumer behavior
		U23DN08	**FOOD SAFETY AND QUALITY CONTROL**	**CO 1**	Explain the areas in food systems that come under the purview of Food Safety & Quality Assurance.
				CO 2	Cite Indian and international food laws and food safety programs
				CO 3	Demonstrate familiarity with FSSAI regulations and Licensing
				CO 4	Acquire skills to prepare manual and SOP for food industry
				CO 5	Demonstrate the ability to detect common adulterants in food
		U23SEN1	**FUNDAMENTALS OF ART AND DESIGN**	**CO1**	Classify design types like structural and decorative design
				CO2	Explain the principles in planning a life space
				CO3	Use different elements of design appropriately in creating design objects.
				CO4	Apply the Art principles in Interior Design.
				CO5	Apply colour harmonies in various rooms.
				CO1	Describe the Qualities, Skills, and responsibility of good housekeeper.
				CO2	Explain the procedure and services provided by the housekeeping department.

		U23SEN2	**HOUSE KEEPING**	**CO3**	Identify different types of guest rooms and list the common pest control methods used in hotels.
				CO4	Choose appropriate storage procedures for linen and uniforms.
				CO5	Evaluate suitability of cleaning agents to clean different surfaces.
		U23SEN3	**FRONT OFFICE MANAGEMENT**	**CO1**	Classify hotels and rooms based on star category, ownership, location etc.
				CO2	Describe the organization chart of a front office department and duties and Functions of front office staff
				CO3	Explain the basis of tariff fixation and guest registration process
				CO4	Evaluate the role of front office in ensuring customer comfort and satisfaction from check -in to check out at the hotel
				CO5	Summarize the role of the guest accounting process and each of the front office staff.
		U23SEN4	**ENTREPRENEURSHIP DEVELOPMENT**	**CO1**	Summarize the types and qualities of an entrepreneur.
				CO2	Explain the procedure of starting a business.
				CO3	Describe the role of financing institutions involved in entrepreneurship development.
				CO4	Discuss the steps in preparation of project proposal.
				CO5	Analyze the case histories of successful women entrepreneurs.
		U23SEN5P	**BAKERY PRACTICAL**	**CO1**	To Know the essentials of basic bakery and confectionery knowledge
				CO2	To identify the various commodities used in bakery and confectionery preparation.
				CO3	To illustrate the methods of cooking in bakery and confectionery.
				CO4	To differentiate the between selection and identification of raw materials used in bakery and confectionery.
				CO5	To classify the cooking equipment used in bakery and confectionery.
				CO1	Select accessories and arrange pictures suited to the background of interiors

		U23SEN6	**INTERIOR DECORATION**	**CO2**	Creating innovative flower arrangements in accordance to the occasion and needs
				CO3	Apply the principles of furniture arrangement in various areas of Interiors.
				CO4	Apply proper lighting for efficient lighting in interiors and exteriors
				CO5	Use decorative styles and wall decoration techniques appropriately in various rooms.
		U23SEN7	**WOMEN'S HEALTH AND WELLNESS**	**CO1**	Define terms related to nutrition, physical, reproductive, mental and social health.
				CO2	Discuss the need for right nutrition, exercises and skills needed for the overall well- being of women.
				CO3	Explain the significance of maintaining physical, reproductive, mental and social health for the overall well-being of women.
				CO4	Devise strategies to improve women's health in a holistic manner.
				CO5	Recommend simple measures for a healthy lifestyle.
		U23FN1	**INTRODUCTION TO HOME SCIENCE**	**CO1**	Understand the meaning of Home Science, its components and the basics of Household Arts
				CO2	Identify the relationship between food, nutrition and health
				CO3	Distinguish the types of food service and comprehend food exchange lists
				CO4	Explain the stages of Human Development and classification of textile fibre
				CO5	Describe the scope of Extension Education and the concept of Home Management
		U23SIN1	**SUMMER INTERNSHIP**	**CO1**	Learns how a dietary department functions and the specific roles and responsibilities of a dietitian.
				CO2	Acquires training in nutrition diagnoses of each patient assessed
				CO3	Demonstrates the ability to implement nutrition care plans; document nutrition care provided maintain internship logbook and monitor outcomes of the nutrition plan
				CO4	Demonstrates competency in professional presentation, communication and writing skills.
				CO5	Acquires training in diet counseling, online counseling and group counseling

		U23PCN1	**LIFE SKILL STRATEGIES AND TECHNIQUES**	**CO1**	Describe different skills and techniques needed to maintain a healthy personal and professional approach to life.
				CO2	Identify skills needed for a healthy lifestyle.
				CO3	Explain the need to develop various skillsets for a holistic life.
				CO4	Develop confidence with respect to emotional competency, personal and professional life.
				CO5	Recommend life skill strategies for the holistic development of the individual.
		U23CS1	CC1 - Python Programming	CO1	Learn the basics of python, Do simple programs on python, Learn how to use an array.
				CO2	Develop program using selection statement, Work with Looping and jump statements, Do programs on Loops and jump statements.
				CO3	Concept of function, function arguments, Implementing the concept strings in various application, Significance of Modules, Work with functions, Strings and modules.
				CO4	Work with List, tuples and dictionary, Write program using list, tuples and dictionary.
				CO5	Usage of File handlings in python, Concept of reading and writing files, Do programs using files.
		U23CS2P	CC2 - Practical : Python Programming	CO1	Demonstrate the understanding of syntax and semantics of PYTHON language
		U23GS35	GEC 1 (T) Elective Course 1 (Generic / Discipline Specific) – Discrete Mathematics	CO2	Identify the problem and solve using PYTHON programming techniques.
		U23GS50P	GEC 2 (P) Elective Course 2 (Generic / Discipline Specific) – Programming in C Lab	CO3	Identify suitable programming constructs for problem solving.
				CO4	Analyze various concepts of PYTHON language to solve the problem in an efficient way.
				CO5	Develop a PYTHON program for a given problem and test for its correctness.
		U23SES1P	SEC-1 Skill Enhancement Course- Office Automation Lab	CO1	Possess the knowledge on the basics of computers and its components
				CO2	Gain knowledge on Creating Documents, spreadsheet and presentation.
				CO3	Learn the concepts of Database and implement the Query in Database.
				CO4	Demonstrate the understanding of different automation tools.

				CO5	Utilize the automation tools for documentation, calculation and presentation purpose.
		U23FS1	Foundation Course FC - Problem Solving Techniques	CO1	Study the basic knowledge of Computers. Analyze the programming languages.
				CO2	Study the data types and arithmetic operations. Know about the algorithms. Develop program using flow chart and pseudocode.
				CO3	Determine the various operators. Explain about the structures. Illustrate the concept of Loops
				CO4	Study about Numeric data and character-based data. Analyze about Arrays.
				CO5	Explain about DFD. Illustrate program modules.Creating and reading Files
		U23CS3	CC3 - Data Structure and Algorithms using C++	CO1	Understand the concept of Dynamic memory management, data types, algorithms, Big O notation
				CO2	Understand basic data structures such as arrays, linked lists, stacks and queues
				CO3	Describe the hash function and concepts of collision and its resolution methods
				CO4	Solve problem involving graphs, trees and heaps
				CO5	Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data
		U23CS4P	CC4 - Practical: Data Structure and Algorithms using C++	CO1	Understand the concept of Dynamic memory management, data types, algorithms, Big O notation
			GEC 2 (P) Elective Course 2 (Generic / Discipline Specific) – Programming in C Lab	CO2	Understand basic data structures such as arrays, linked lists, stacks and queues
			GEC 3 (T) Elective Course 3 (Generic / Discipline Specific) – Digital Logic Fundamentals	CO3	Describe the hash function and concepts of collision and its resolution methods
				CO4	Solve problem involving graphs, trees and heaps
				CO5	Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data
		U23SES2P	SEC-2 Skill Enhancement Course- Multimedia Lab	CO1	understand the concepts, importance, application and the process of developing multimedia
				CO2	to have basic knowledge and understanding about image related processings
				CO3	To understand the framework of frames and bit images to animations

				CO4	Speaks about the multimedia projects and stages of requirement in phases of project.
				CO5	Understanding the concept of cost involved in multimedia planning, designing, and producing
		U23SES3	SEC-3 / NM Skill Enhancement Course – Multimedia Systems	CO1	understand the concepts, importance, application and the process of developing multimedia
				CO2	to have basic knowledge and understanding about image related processings
				CO3	To understand the framework of frames and bit images to animations
				CO4	Speaks about the multimedia projects and stages of requirement in phases of project.
				CO5	Understanding the concept of cost involved in multimedia planning, designing, and producing
		U23CS5	CC5 (T)- Microprocessor and Microcontroller	CO1	Remember the Basic binary codes and their conversions. Binary concepts are used in Microprocessor programming and provide a good understanding of the architecture of 8085o introduce the internal organization of Intel 8085 Microprocessor..
				CO2	Understanding the 8085 instruction set and their classifications, enables the students to write the programs easily on their own using different logic
				CO3	Applying different types of instructions to convert binary codes and analyzing the outcome. The instruction set is applied to develop programs on multibyte arithmetic operations.
				CO4	Analyze how peripheral devices are connected to 8085 using Interrupts and DMA controller.
				CO5	An exposure to create real time applications using microcontroller.
		U23CS6P	CC6 (P) Microprocessor and Microcontroller Lab	CO1	Remember the Basic binary codes and their conversions. Binary concepts are used in Microprocessor programming and provide a good understanding of the architecture of 8085o introduce the internal organization of Intel 8085 Microprocessor..
			GEC4 (T) Elective Course 4 (Generic / Discipline Specific) – Statistical Methods	CO2	Understanding the 8085 instruction set and their classifications, enables the students to write the programs easily on their own using different logic
			GEC5 (P) Elective Course 5 (Generic / Discipline Specific) – PHP Programming Lab	CO3	Applying different types of instructions to convert binary codes and analyzing the outcome. The instruction set is applied to develop programs on multibyte arithmetic operations.
				CO4	Analyze how peripheral devices are connected to 8085 using Interrupts and DMA controller.
				CO5	An exposure to create real time applications using microcontroller.
				CO1	Learn the basics of computer, Construct the structure of the required things in computer, learn how to use it.
				CO2	Develop organizational structure using for the devices present currently under input or output unit.

USE	Computer Science	U23SES4	SEC-4 Skill Enhancement Course - (Entrepreneurial Based) – Fundamentals of Information Technology	CO3	Concept of storing data in computer using two header namely RAM and ROM with different types of ROM with advancement in storage basis.
				CO4	Work with different software, Write program in the software and applications of software.
				CO5	Usage of Operating system in information technology which really acts as a interpreter between software and hardware.
		U23SES5P	SEC-5 NM Skill Enhancement Course - (Discipline Specific/ Generic) – VISUAL BASIC Lab	CO1	Knows the basic concept in VB Concept of resources in VB
				CO2	Knows Design concept. Concept of GUI based events Understand the concept of DDL operations.
				CO3	Understand the Connection to the DATABASE. Concept of list
				CO4	Creating Menu Editor
				CO5	Concept of adding images Understand the table creation.
		U23CS7	CC7 - Industry Module – Java Programming	**CO1**	Understand the basic Object-oriented concepts. Implement the basic constructs of Core Java.
				CO2	Implement inheritance, packages, interfaces and exception handling of Core Java.
				CO3	Implement multi-threading and I/O Streams of Core Java
				CO4	Implement AWT and Event handling.
				CO5	Use Swing to create GUI.
		U23CS8P	CC8 - Practical: Java Programming Lab	CO1	Understand the basic Object-oriented concepts.Implement the basic constructs of Core Java.
			GEC5 (P) - Elective Course (Generic / Discipline Specific) – PHP Programming Lab	CO2	Implement inheritance, packages, interfaces and exception handling of Core Java.
			GEC6 (T) - Elective Course (Generic / Discipline Specific) – Resource Management Techniques	CO3	Implement multi-threading and I/O Streams of Core Java
				CO4	Implement AWT and Event handling.
				CO5	Use Swing to create GUI.
				CO1	Develop working knowledge of HTML

		U23SES6P	SEC-6 - Skill Enhancement Course – Web Designing Lab	CO2	Ability to Develop and publish Web pages using Hypertext Markup Language (HTML).
				CO3	Ability to optimize page styles and layout with Cascading Style Sheets (CSS).
				CO4	Ability to develop a java script
				CO5	An ability to develop web application using Ajax.
		U23CS9	CC9 –Software Engineering	**CO1**	Gain basic knowledge of analysis and design of systems
				CO2	Ability to apply software engineering principles and techniques
				CO3	Model a reliable and cost-effective software system
				CO4	Ability to design an effective model of the system
				CO5	Perform Testing at various levels and produce an efficient system.
		U23CS10	CC10 - Database Management System	CO1	Understand the various basic concepts of Data Base System. Difference between file system and DBMS and compare various data models.
				CO2	Define the integrity constraints. Understand the basic concepts of Relational Data Model, Entity-Relationship Model.
				CO3	Design database schema considering normalization and relationships within database. Understand and construct database using Structured Query Language. Attain a good practical skill of managing and retrieving of data using Data Manipulation Language (DML)
				CO4	Classify the different functions and various join operations and enhance the knowledge of handling multiple tables.
				CO5	Learn to design Data base operations and implement using PL/SQL programs. Learn basics of PL/SQL and develop programs using Cursors, Exceptions
		U23CS11P	CC11 - Practical: Database Management System Lab	CO1	Understand the various basic concepts of Data Base System. Difference between file system and DBMS and compare various data models.
				CO2	Define the integrity constraints. Understand the basic concepts of Relational Data Model, Entity-Relationship Model.
				CO3	Design database schema considering normalization and relationships within database. Understand and construct database using Structured Query Language. Attain a good practical skill of managing and retrieving of data using Data Manipulation Language (DML)
				CO4	Classify the different functions and various join operations and enhance the knowledge of handling multiple tables.
				CO5	Learn to design Data base operations and implement using PL/SQL programs. Learn basics of PL/SQL and develop programs using Cursors, Exceptions

		U23CS13	CC13 –Computer Networks	CO1	To Understand the basics of Computer Network architecture, OSI and TCP/IP reference models
				CO2	To gain knowledge on Telephone systems using wireless network
				CO3	To understand the concept of MAC
				CO4	To analyze the characteristics of Routing and Congestion control algorithms
				CO5	To understand network security and define various protocols such as FTP, HTTP, Telnet, DNS
		U23CS14	CC14 - .NET Programming	CO1	Develop working knowledge of C# programming constructs and the .NET Framework
				CO2	To develop a software to solve real-world problems using ASP.NET
				CO3	To Work On Various Controls Files
				CO4	To create a web application using MicrosoftADO.NET.
				CO5	To develop web applications using XML
		U23CS15P	CC15 - Practical: .NET Programming Lab	CO1	To create web applications and implement various controls
				CO2	Create web pages in Rich control.
				CO3	Develop knowledge about file handling operations
				CO4	An ability to design XML classes
				CO5	To develop a software to solve real-world problems using ASP.NET
		U23DS22	DSEC3 - Elective Course – Computer Graphics	CO1	Understand the various concepts of AI Techniques.
				CO2	Understand various Search Algorithm in AI.
				CO3	Understand probabilistic reasoning and models in AI.
				CO4	Understand Markov Decision Process.

				CO5	Understand various type of Reinforcement learning Techniques.
		U23PCS1P	Professional Competency Skill Enhancement Course – Image Processing using MATLAB	CO1	Understand the fundamental concepts of digital image processing.
			Extension Activity/ NCC/NSS/SPORTS	CO2	Understand various 2D Image transformations
				CO3	Understand image enhancement processing techniques and filters
				CO4	Understand the classification of Image segmentation techniques
				CO5	Understand various image compression techniques
		U23CU1	Python Programming	CO1	Learn the basics of python, Do simple programs on python, Learn how to use an array.
				CO2	Develop program using selection statement, Work with Looping and jump statements, Do programs on Loops and jump statements.
				CO3	Concept of function, function arguments, Implementing the concept strings in various application, Significance of Modules, Work with functions, Strings and modules
				CO4	Work with List, tuples and dictionary, Write program using list, tuples and dictionary.
				CO5	Usage of File handlings in python, Concept of reading and writing files, Do programs using files.
		U23CU2P	Practical :Python Programming Lab	CO1	Demonstrate the understanding of syntax and semantics of python.
				CO2	Identify the problem and solve using PYTHON programming techniques
				CO3	Identify suitable programming constructs for problem solving
				CO4	Analyze various concepts of PYTHON language to solve the problem in an efficient way
				CO5	Develop a PYTHON program for a given problem and test for its correctness.
		U23GU58	Discrete Mathematics	CO1	Apply boolean algebra, the language that simplifies communication in the world of computers.
				CO2	Use formal logic, and will be able to identify interesting outcomes
				CO3	Implement mathematical structures (sets, relations, functions, sequences, series, graphs) in real world situations.

				CO4	Summarize principles of counting and will be able to grasp patterns in data that follows fixed set of rules.
				CO5	Discuss graph concepts.
		U23GU71P	Multimedia Lab - Photoshop	CO1	Able to develop an animation using Flash
				CO2	Able to develop an application and modification using Photoshop
				CO3	Able to create a game application using Flash
				CO4	Able to design a flex or book cover page designing.
		U23SFU7P	Office Automation Lab	CO1	Possess the knowledge on the basics of computers and its components
				CO2	Gain knowledge on Creating Documents, spreadsheet and presentation.
				CO3	Learn the concepts of Database and implement the Query in Database.
				CO4	Demonstrate the understanding of different automation tools.
				CO5	Utilize the automation tools for documentation, calculation and presentation purpose.
		U23FU1	Foundation Course - Structure programming language in C	CO1	Remember the program structure of C with its syntax and semantics
				CO2	Understand the programming principles in C (data types, operators, branching and looping, arrays, functions, structures, pointers and files)
				CO3	Apply the programming principles learnt in real-time problems
				CO4	Analyze the various methods of solving a problem and choose the best method
				CO5	Code, debug and test the programs with appropriate test cases
		U23CU3	Object Oriented Programming Concepts Using C++	CO1	Remember the program structure of C with its syntax and semantics
				CO2	Understand the programming principles in C (data types, operators, branching and looping, arrays, functions, structures, pointers and files)
				CO3	Apply the programming principles learn in real-time problems

				CO4	Analyze the various methods of solving a problem and choose the best method
				CO5	Code, debug and test the programs with appropriate test cases
		U23CU4P	Practical: C++ Programming Lab	CO1	Remember the program structure of C with its syntax and semantics
				CO2	Understand the programming principles in C (data types, operators, branching and looping, arrays, functions, structures, pointers and files)
				CO3	Apply the programming principles learn in real-time problems
				CO4	Analyze the various methods of solving a problem and choose the best method
				CO5	Code, debug and test the programs with appropriate test cases
		U23GU68	Digital Logic Fundamentals	CO1	Define the basic components of a digital computer and their function
				CO2	Enhance knowledge on simplifying digital circuits.
				CO3	Apply Boolean algebra in design of gates.
				CO4	Simplify and solve the logical expressions.
				CO5	Design various counters.
		U23GU71P	Multimedia Lab -Flash	CO1	Able to develop an animation using Flash
				CO2	Able to develop an application and modification using Photoshop
				CO3	Able to create a game application using Flash
				CO4	Able to design a flex or book cover page designing.
		U23SFU10	Multimedia Systems	CO1	Understand the concepts, importance, application and the process of developingmultimedia
				CO2	To have basic knowledge and understanding about imagerelated processings
				CO3	To understand the framework of frames and bit images to animations

				CO4	Speaksaboutthemultimediaprojectsandstagesofrequirementinphasesofproject.
				CO5	Understanding the concept of cost involved in multimedia planning,designing,and producing
		U23SFU19	Web Designing	CO1	Develop working knowledge of HTML
				CO2	Ability to Develop and publish Web pages using Hypertext Markup Language (HTML).
				CO3	Ability to optimize page styles and layout with Cascading Style Sheets (CSS).
				CO4	Ability to develop a java script
				CO5	An ability to develop web application using Ajax.
		U23CU5	Data Structures and Algorithms	CO1	Understand the concept of Dynamic memory management, data types, algorithms, Big O notation
				CO2	Understand basic data structures such as arrays, linked lists, stacks and queues
				CO3	Describe the hash function and concepts of collision and its resolution methods
				CO4	Solve problem involving graphs, trees and heaps
				CO5	Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data
		U23CU6P	Practical: Data Structures and Algorithms Lab	CO1	Understand the concept of Dynamic memory management, data types, algorithms, Big O notation
				CO2	Understand basic data structures such as arrays, linked lists, stacks and queues
				CO3	Describe the hash function and concepts of collision and its resolution methods
				CO4	Solve problem involving graphs, trees and heaps
				CO5	Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data
				CO1	Understand the various basic concepts of Data Base System. Difference between file system and DBMS and compare various data models.
				CO2	Define the integrity constraints. Understand the basic concepts of Relational Data Model, Entity-Relationship Model.

UCAE	**BCA**	U23GU72	Database management system	CO3	Design database schema considering normalization and relationships within database. Understand and construct database using Structured Query Language. Attain a good practical skill of managing and retrieving of data using Data Manipulation Language (DML)
				CO4	Classify the different functions and various join operations and enhance the knowledge of handling multiple tables.
				CO5	Learn to design Data base operations and implement using PL/SQL programs. Learn basics of PL/SQL and develop programs using Cursors, Exceptions
		U23SEU15	Entrepreneurial Skill-Enterprise Resource Planning	CO1	Understand the basic concepts of ERP.
				CO2	Identify different technologies used in ERP
				CO3	Understand and apply the concepts of ERP Manufacturing Perspective and ERP Modules
				CO4	Discuss the benefits of ERP
				CO5	Apply different tools used in ERP
		U23CU7	Core Industry Module – Programming in Java	CO1	Understand the basic Object-oriented concepts.Implement the basic constructs of Core Java.
				CO2	Implement inheritance, packages, interfaces and exception handling of Core Java.
				CO3	Implement multi-threading and I/O Streams of Core Java
				CO4	Implement AWT and Event handling.
				CO5	Use Swing to create GUI.
		U23CU8P	Programming in Java Lab	CO1	Understand the basic Object-oriented concepts.Implement the basic constructs of Core Java.
				CO2	Implement inheritance, packages, interfaces and exception handling of Core Java.
				CO3	Implement multi-threading and I/O Streams of Core Java
				CO4	Implement AWT and Event handling.
				CO5	Use Swing to create GUI.
				CO1	Understand the various concepts of AI Techniques.

		U23GU73	Artificial Intelligence	CO2	Understand various Search Algorithm in AI.
				CO3	Understand probabilistic reasoning and models in AI.
				CO4	Understand Markov Decision Process.
				CO5	Understand various type of Reinforcement learning Techniques.
		U23SEU20	Software Engineering	CO1	Gain basic knowledge of analysis and design of systems
				CO2	Ability to apply software engineering principles and techniques
				CO3	Model a reliable and cost-effective software system
				CO4	Ability to design an effective model of the system
				CO5	Perform Testing at various levels and produce an efficient system.
		U23SU9	Image Processing	CO1	Understand the fundamental concepts of digital image processing.
				CO2	Understand various 2D Image transformations
				CO3	Understand image enhancement processing techniques and filters
				CO4	Understand the classification of Image segmentation techniques
				CO5	Understand various image compression techniques
		U23CU9	Operating System	CO1	Define the fundamentals of OS and identify the concepts relevant to process , process life cycle, Scheduling Algorithms, Deadlock and Memory management
				CO2	know the critical analysis of process involving various algorithms, an exposure to threads and semaphores
				CO3	Have a complete study about Deadlock and its impact over OS. Knowledge of handling Deadlock with respective algorithms and measures to retrieve from deadlock
				CO4	Have complete knowledge of Scheduling Algorithms and its types.
				CO5	understand memory organization and management

		U23CU10	ASP.Net Programming	CO1	Develop working knowledge of C# programming constructs and the .NET Framework
				CO2	To develop a software to solve real-world problems using ASP.NET
				CO3	To Work On Various Controls Files
				CO4	To create a web application using MicrosoftADO.NET.
				CO5	To develop web applications using XML
		U23CU11P	ASP.Net Programming Lab	CO1	To create web applications and implement various controls
				CO2	Create a web pages in Rich control.
				CO3	Develop knowledge about file handling operations
				CO4	An ability to design XML classes
				CO5	To develop a software to solve real-world problems using ASP.NET
		U23DU08	Open Source Technologies	CO1	Acquire and understand the basic concepts in Java,application of OOPS concepts.
				CO2	Acquire knowledge about operators and decision-making statements.
				CO3	Identify the significance and application of Classes, arrays and interfaces and analyzing java arrays
				CO4	Understand about the applications of OOPS concepts and analyze overriding and packages through java programs.
				CO5	Create window-based programming using applet and graphics programming.
		U23DU19	Datamining and Warehousing	CO1	To understand the basic concepts and the functionality of the various data mining and data warehousing component
				CO2	To know the concepts of Data mining system architectures
				CO3	To analyze the principles of association rules
				CO4	To get analytical idea on Classification and prediction methods

				CO5	To Gain knowledge on Cluster analysis and its methods.
		U23CU13	Computer Networks	CO1	To Understand the basics of Computer Network architecture, OSI and TCP/IP reference model
				CO2	To gain knowledge on Telephone systems using wireless network
				CO3	To understand the concept of MAC
				CO4	To analyze the characteristics of Routing and Congestion control algorithms
				CO5	To understand network security and define various protocols such as FTP, HTTP, Telnet, DNS
		U23CU14	Data Analytics using R Programming	CO1	Work with big data tools and its analysis techniques.
				CO2	Analyze data by utilizing clustering and classification algorithms.
				CO3	Learn and apply different mining algorithms and recommendation systems for large volumes of data.
				CO4	Perform analytics on data streams.
				CO5	Learn NoSQL databases and management.
		U23CU15P	Practical : R Programming Lab	CO1	Acquire programming skills in core R Programming
				CO2	Acquire Object-oriented programming skills in R Programming.
				CO3	Develop the skill of designing graphical-user interfaces (GUI) in R Programming
				CO4	Acquire R Programming skills to move into specific branches
		U23DU18P	PHP programming lab	CO1	Write PHP scripts to handle HTML forms
				CO2	Write regular expressions including modifiers, operators, and metacharacters.
				CO3	Create PHP Program using the concept of array.
				CO4	Create PHP programs that use various PHP library functions

				CO5	Manipulate files and directories.
		U23DU15	Cloud Computing	CO1	Understand the fundamental concepts and Technologies in Cloud Computing.
				CO2	Able to understand various cloud service types and their uses and pitfalls.
				CO3	Able to understand Cloud Architecture and Application design.
				CO4	Understand the various aspects of application design, benchmarking and security in the Cloud.
				CO5	Understand various Case Studies in Cloud Computing.