Auxilium College (Autonomous), Gandhi Nagar, Vellore - 632 006.

Course Learning Outcomes

Programme	Course Code- Course	Course Learning Outcomes
ENGLISH	UENGA20 General English I	1. Apply English language skills with ease in academic and real-life situations. 2. Build confidence in students relevant to regional language medium of instruction at the school. 3. Read and comprehend course content texts. 4. Write grammatically correct creative and descriptive sentences and paragraphs in specific contexts. 5. Conduct role plays on social contexts with a message, and communicate clearly andeffectively in formal and informal contexts. 6. Instill the basics of grammar to develop language proficiency and skills.
	UENGB20- General English II	1. Develop competence in the four skills: writing, speaking, reading and listening 2. Acquire language skills through familiarity with Indian Writing in English. 3. Improve the speaking ability in English both in terms of fluency and comprehensibility. 4. Ability to develop a life-long passion for the English language and literature. 5. Analyze the autobiographies of eminent leaders and learn the values of life. 6. Extend vocabulary skills by introducing new texts.
	UENGC20- General English III	1. Evolve newer ways to approach goals. 2. Enable students to be aware of the contemporary Indian issues of national importance. 3. Improve the speaking ability both in terms of fluency and comprehensibility. 4. Paraphrase the Online sources effectively and accurately. 5. Develop comprehensive abilities as to read, write and speak.
	UENGD20- General English IV	1. Relate real life situation by reading the literary text. 2. Respect and protect the difference among nations and practice the social values. 3. Instil the ability to analyse texts critically and practice writing through assignments. 4. Develop knowledge about the system of Governance and its regulations. 5. Create a sense of belonging towards the community and nation.

		6. Demonstrate skills which will encourage job employability.
B.A. ENGLISH	UCENA20- INTRODUCTION TO LITERARY STUDIES	1. Demonstrate knowledge of fundamental literary forms, terms, expressions, techniques and the outline of English literary studies from 16th to 20th century. 2. Demonstrate understanding of various genres such as poetry, essays, dramas and ballads 3. Apply the knowledge of the form, structure, narrative techniques, devices and style of literary works to read and interpret literature 4. Appraise the value and nuances of the language of literature with an eye for the key structural and stylistic aspects of all the literary genres 5. Relate literature with its historical, social, philosophical and political contexts
	UCENB20 - ENGLISH PRONUNCIATION: THEORY AND PRACTICE	1. Infer/recognize the role of speech sounds in human language 2. Demonstrate understanding of the structural organization of speech sounds of Englishlanguage and the subtle variations in its pronunciation 3. Illustrate, identify and label the parts of the human articulator system 4. Remember the English vowels, consonants and diphthongs along with their corresponding(IPA) Phonetic symbols 5. Identify the difference between (i) consonants and vowels, (ii) pure vowels and diphthongs, (iii)voiced and voiceless consonants, (iv) place of articulation and manner ofarticulation 6. Remember the fundamental aspects of connected speech and their definitions 7. Illustrate a consonant and vowel chart according to their characteristics and classification 8. Pronounce individual sounds clearly and accurately 9. Accurately pronounce words separately and in connected speech 10. Develop an optimal accuracy in word stress and intonation
	UALSC20 – Allied I- LANGUAGE SKILLS FOR COMMUNICATION	1. Demonstrate adequate efficiency in oral and written communication in English. 2. Demonstrate knowledge of the structure of English language. 3. Understand the process of communication in general and communication in English. 4. Utilize the knowledge and skills of English language to get employment. 5. Apply the art of rhetoric in oral and written communication in English, convincingly.
	USENA120 –SBE I : ENGLISH FOR COMMUNICATION SKILLS	1. Have the knowledge about the elements of effective communication skills. 2. Understand the concepts of impactful writing. 3. Implement the strategies for effective speech communication.

		4. Acquire knowledge on employment communication. 5. Apply communicative skills for conversational and academic purposes.
	UCENC20 - INDIAN WRITING IN ENGLISH	1. Understand the history of Indian writing in English. 2. Develop an understanding of different literary genres. 3. Interpret and appraise different style of writings. 4. Appreciate the diverse themes which are intrinsic to Indian culture 5. Appraise translated texts from the regional languages of India for their indigenous sensibilities. 6. Develop an ability to contextualize literary texts from across India.
	UCEND20 - LITERARY FORMS AND TERMS	1. Acquire a clear understanding of literary forms and terms 2. Remember different ages and movements in literature 3. Identify the figures of speech in literary texts 4. Prepare for competitive and qualifying examinations 5. Develop the analytical skills in literature 6. Enhance writing skills and style
	UAEEG20 – Allied II- ELEMENTS OF ENGLISH GRAMMAR	1. Remember and recall the basic rules of English grammar 2. Understand the basic concepts of grammar 3. Develop insights into language structure and correct pattern of English language 4. Use English Language with grammatical accuracy 5. Analyses, identify and correct grammatical errors
	USENA220-SBE II : CONVERSATIONAL ENGLISH	1. Have the knowledge about the elements of effective communication skills. 2. Understand the concepts of impactful writing. 3. Implement the strategies for effective speech communication. 4. Acquire knowledge on employment communication. 5. Apply communicative skills for conversational and academic purposes.
	UCENE20 - ELIZABETHAN LITERATURE	1. Know the Literary History of Elizabethan Age and analyse the Elizabethan writing as both register and response to historical, social and political development of the era. 2. Comprehend the major themes and forms in the Literature of the Elizabethan period. 3. Understand and reflect on texts “from different perspectives”. 4. Appreciate and interpret the works of Shakespeare and his contemporaries in the Elizabethan era. 5. Identify and discuss the critical idea, values and human conditions in Elizabethan Literature

	UCENF20 - AMERICAN LITERATURE	1. Examine the historical, cultural, rhetorical contexts in which the literary texts werewritten. 2. Analyze literary works as expressions of individual or communal values within the social,political, cultural or religious contexts of different literary periods. 3. Demonstrate knowledge of the development of characteristic forms or styles of expression during different historical periods in different regions. 4. Articulate the aesthetic principles that guide the scope and variety of works in arts andhumanities. 5. Write clear, focused and coherent essays about literature for an academic audience usingstandard English conventions of grammar and style. 6. Discuss the issues, conflicts, preoccupations and themes of various literatures of America.
B.A. ENGLISH	UAHEL20 - HISTORY OF ENGLISH LITERATURE	1. Understand the writers and the socio-political, historical background of English Literature down the ages. 2. Recognize and approach Literature as an expression of author"s interpretation and representation of life from their ages and to critically interpret the influence of theindividual writers upon an age. 3. Analyze the growth and transformation of English Literature from period to period and to evaluate the connections, text, context and continuity in English Literature down theages. 4. Develop a critical and creative thinking, positive attitude and better personality by learning life lessons through Literature reflecting the various dimensions of life. 5. Apply a critical enquiry to designate the style, technique and use of language of thewriters of different ages. 6. Demonstrate the skill of oral and written form of interpretation.
	USENC320- ENGLISH FOR COMPETITIVE EXAMINATION	1. To help the students to recall basic rules of grammar 2. To enhance the students vocabulary andcommunication skill 3. To enable the student to speak and write fluently inEnglish 4. To enhance different verbal and reasoning ability 5. To enrich student knowledge on general awarenessand current affairs 6. To instill confidence in student to improve ability to appear for various competitive exams.
	UCENG20 - NEO-CLASSICAL LITERATURE	1. Recall the historical, social and biographical of the Era 2. Understand the Contextual Structure of the literary texts of the Era

		3. Appreciate the contribution of the Texts and explore the social, historical, artistic andliterary influences of the period. 4. Demonstrate the assimilation of Overtones on Language 5. Apply Critical Perspectives on the Literary Works 6. Develop insights to the various literary genres of the Era
	UCENH20 - ROMANTIC LITERATURE	1. Understand the concepts of gender and women during these periods. 2. Demonstrate an understanding of the historical and cultural context of English Romanticism. 3. Evaluate the impact of Romanticism on the development of literary form and modes ofexpression. 4. Discuss the significance of the historical period on the work by analyzing the effects ofthe major events in that period. 5. Analyze the traits of Romanticism with emphasis on concepts of self, imagination andthe unconscious. 6. Know the various developments namely historical, social, philosophical and politicalcontexts which informed romanticism.
	UATOT20 - Allied - TECHNIQUES OF TRANSLATION	1. Understand the nuances of the process of translation. 2. Acquire the knowledge of the concepts of translation and the role of the translator. 3. Apply the theoretical approaches to translation of the literary and non-literary texts. 4. Learn the practicality of translation and use it to develop awareness of academic writingrequirements. 5. Demonstrate ability to understand the translated texts as well as the original texts.
	USENC420-SBE IV JOURNALISM	1. Understand the history and principles of journalism 2. Develop an understanding of different press laws and acts 3. Describe the role, duties and responsibilities of reporter, sub-editor and editor 4. Interpret different types of news writing 5. Define advertisement and ethics of advertising 6. Develop an ability to write news article and edit news
	UCENI20 -SHAKESPEARE	1. Remember the influence of the Age, Lines, Soliloquies and speeches 2. Understand the impact of the Elizabethan era, discuss and paraphrase the text 3. Apply concepts, explain & interpret, sketch character roles and situations 4. Analyze, Compare and contrast character sketches, examine the salient features of thetext.

		5. Evaluate the nuances of meaning, the style and plot 6. Develop a contemporary stage depiction, identify relevance, justify, defend & write.
	UCENJ20- VICTORIAN LITERATURE	1. To Locate the realm of the Victorian eon in the field of Historical Literary Studies 2.To Visualize the shift/transition from an Idealistic to the Realistic World of Living 3. To Examine different forms/genres personalized by Victorian writers with the predominant themes of the Age 4. To Deconstruct the Literary Outputs with the supportive research via techniques, methods, modes, et al adopted by specific renowned writers of the Era 5. To Reflect the Victorian Epoch from the vantage point as an essence of both Optimismand Pessimism 6. To Formulate a critical hypothesis so as to write creative literary pieces on diversifiedperspectives 7. To Enable students analyze literary works through careful study of the Age 8. To Integrate critical sources effectively into their analysis of literature
	UCENK20 - THE HISTORY OF ENGLISH LANGUAGE AND LINGUISTICS	1. Analyse specific sounds and understand systematic properties of sound system of English 2. Compare and contrast languages in terms of systematic differences in phonetics, phonology, morphology and syntax 3. Understand the cognitive and social dimensions of first and second language acquisition 4. Remember the values associated with the ways of speaking, to broaden the vocabulariesand to develop appreciation of language 5. Recognize language variation, including historical, social and regional dialects 6. Apply the tools of linguistics to analyse the sounds, words and sentences of a language
	UEENA20 - INDIAN WRITING IN TRANSLATION	1. Know Indian literary tradition 2. Comprehend the versatile culture of India. 3. Appreciate the diversity of literary and social voices within and sometimes marginalizedby those traditions. 4. The learners realize the bio-diversity of India 5. The Students Incisively analyze the “Indian-ness” and the writing style of the nativewriters. 6. Develop an ability to read texts in relation to their historical and cultural contexts.

	ELECTIVE IB UEENB18 - LITERARY THEORY	1. Remember seminal contributors and contributions to Literary Theories 2. Understand key concepts in the field of literary theory 3. Interpret texts based on Literary theories 4. Apply theoretical concepts to literary texts 5. Analyse the strength and drawbacks of various approaches 6. Evaluate literary texts and literary theories
	USEND520- SKILL BASED ELECTIVE THEATRE AND DRAMATURGY	1. To understand theatre as a form of art and acquire knowledge of Classical, British, American and Indian stages 2. To identify the fact that real life and drama are inter connected and to portray the connectivity through English language. 3. To learn the practicality of drama and use it to showcase the problems and solutions of life. 4. To use theatre as a medium to bring out social awareness on ecological, psychological, sociological problems faced by the society. 5. To enable the students write scripts on various topics to express their ideas, feelings and concern towards mankind.
	UCENL20 -TWENTIETH CENTURY	1. Recognise Modern Literature from a variety of cultures, languages and historic periods 2. Analyse various elements such as diction, tone, form, genre, imagery, figures of speech,symbolisms 3. Understand the concepts of Enlightenment, Revolution, Capitalism/Emperialism, Democracy and political history 4. Acquire knowledge of the spritiual, social and intellectual background of the age through the works of various writers during the Modern Age 5. Interpret the elements of fiction like Narrative Technique, Setting, Themes, Style and characterisation 6. Enhances aesthetic sense – admiring the beauty of life and literature
	UCENM20 - LITERARY CRITICISM: ANCIENT TO MODERN	1. Identify major theoretical/critical movements and theorists, as well as primary conceptswith which they are associated 2. Understand key terms and trace implications in source texts 3. Interpret and describe the critical ideas, values, and themes that appear in literary andcultural texts 4. Define and apply specific theoretical concepts, theories, and terms to literary and culturaltexts 5. Evaluate and analyze strengths and limitations of critical/theoretical arguments

		6. Examine historical contexts for the development of contemporary theory and criticism 7. Strengthen and deepen critical reading and writing essays, research papers, and critical reviews.
	UEENC20 - WOMEN'S WRITING	1. To Identify the positioning, stature & development of women in the society through agesvia the Literary texts 2. To envisage a culture shock with the distinct form of Writing from the subordinate orsubservient Creators 3. To provide an awareness amongst the modern minds all over the sphere to equip theperfect conduit structuring to proficiency both in life and career 4. To integrate the form and content of the male – defined concepts and women – oriented concepts 5. To reflect the transcendence form of the predominant organization in edifying successfulhumanity 6. To create an opportunity to express their Indianness in the newly acquired language 7. To Introduce Students to a discrete area of Literary Studies – Women‟s Writing in English Literature 8. To Analyze on how different aspects of a writer‟s craft combine to have an impact on theexperience and interpretation of literary texts
	UEEND20 - PRACTICAL CRITICISM	1. Remember historical, contextual, biographical and authorial details 2. Understand Criticism as theory and practice 3. Understand the relevance of history, context, biography and authorship to literary texts 4. Apply critical concepts to films and literary works. 5. Analyse various literary genres 6. Analyse Films
	UEENE20 - NEW LITERATURES IN ENGLISH	1. Know the relationship between Great Britain and Nations that were once colonized. 2. Comprehend the problems of race, class, history and identity presented in the Postcolonialtexts. 3. Reflect upon one‟s personal and cultural presuppositions and how these affect one‟svalues and connections with the world 4. Analyze the problems of identity, subjugation and cultural identification 5. Describe modes of writing and reading that interrogate histories and the presence

		ofcolonial mentalities and ways of life in a variety of postcolonial locations. 6. Appraise the complex maze of theoretical terms and concepts that characterize Postcolonial studies and savor the wonderful variety and richness of Literature.
	UEENF20 – ELECTIVE III B COMMUNICATIVE ENGLISH GRAMMAR	1. Recall the underlying „rules" of grammar 2. Develop insight into the structure of English Language 3. Demonstrate understanding of linguistic structures of language variety used 4. Analyze grammatical structure of sentences within English texts 5. Apply and make use of grammar in writing English
	USEND620 – SBE:CRITICAL APPROACHES TO LITERATURE	1. Remember seminal writers, works and ideas 2. Understand key concepts under various approaches 3. Compare and Contrast various critical theories 4. Analyse the strength and drawbacks of various approaches 5. Apply critical theories for the interpretation of literary texts 6. Apply critical concepts to literary texts
M.A. ENGLISH	PCENA20 - CHAUCER AND ELIZABETHAN LITERATURE	1. To introduce learners to a detail and thorough study of the Era 2. To inculcate critical interpretation of Literary Texts 3. To expose learners to the evolution of English Language in Literature 4. To assimilate writing and analytical Skills 5. To recall the historical, social and biographical Influence 6. To motivate research skills among learners
	PCENB20 - RESTORATION AND EIGHTEENTH CENTURY LITERATURE	1. Develop an understanding of the Eighteenth century and Restoration Literature 2. Identify and analyze the writer's perspective, expression and their reflection of life representing the Restoration age 3. Critically interpret the variety of literary genres, new trends, themes and style in Literature of this age 4. Analyze the ways in which the authors from the Restoration constructed the literary values and to trace their influence upon the age 5. Examine the traditional, religious, political, and aesthetic authority of this age 6. Demonstrate the strategies for doing research in Restoration Literature
	PCENC20 - CLASSICAL LITERATURE OF THE WORLD	1. Recognize Classics through translation for their rich source of cultural heritage 2. Identify great literary works and their influence on world literature 3. Familiarize and Interpret the best that was known and thought in the world 4. Apply the knowledge gained through plots, characters, themes etc. to real life situations 5. Analyse literary works to understand the world and interpret everyday situations

		6. Evaluate human life and experience in texts and in reality
	PCEND20 - INDIAN LITERATURE IN ENGLISH	1. Recognize major movements and figures of Indian Literature in English through the study of selected literary texts 2. Understanding of different literary genres; poetry, fiction and non-fiction 3. Interpret different styles of writing: expository, narrative and descriptive 4. Analyse literary concepts and underlying aesthetics 5. Evaluate original writing in English by Indian authors and translated texts from regional languages 6. Develop writing skills to write research-based papers
	PEENA20 - ESSENTIAL ENGLISH GRAMMAR	1. Understanding of grammatical structures common to British English 2. Interpret how the various systems of English grammar function in relation to one another and apply both traditional and contemporary methods in written and oral presentations 3. Apply the knowledge of English grammar in both written and oral performance 4. Gain essential practice for all covered material through classroom activities and presentations and achieve linguistic competence in using language effectively, efficiently and appropriately 5. Develop an editing eye in written and spoken performance and present original research and analysis in standard written academic language
	PEENB20 - MODERN ENGLISH GRAMMAR	1. Establish the feasibility of following the rules and concepts that aid in usage 2. Identify grammar learning strategies to aid in comprehensibility 3. Explore learning strategies that integrate language and grammatical construction for standard language acquisition 4. Justify the application of grammar for best outcomes in language learning 5. Create activities that have a great impact to develop grammatical usage to suit student's ability 6. Create a resource bank of grammar teaching strategies, ideas and techniques to be used for English Language Learning
	PIENA20 - INDEPENDENT ELECTIVE I A: LITERARY	1. Remember and recall names of authors, literary works, dates, facts, terms and concepts

	SKILLS FOR EMPLOYABILITY –I	2. Demonstrate knowledge of English Language and Linguistics 3. Apply knowledge of literary criticism to anlayse literary works 4. Discover interest and demonstrate knowledge in literature in English outside Britain and America 5. Demonstrate knowledge in Application-oriented areas like Research Methodology, Translation and English Language Teaching 6. Develop effective strategies to prepare for competitive examinations
	PIENB20 - INDEPENDENT ELECTIVE I B: TECHNICAL AND BUSINESS WRITING	1. Develop critical Thinking Skills – to include creative thinking, innovation, inquiry and analysis, evaluation and syntheses of information 2. Acquire communication Skills – to include effective development, interpretation, and expression of ideas through written, oral, and visual communication 3. Recognize, analyze, and accommodate diverse audiences and produce documents appropriate to audience, purpose, and genreand edit for appropriate style, including attention to word choice, sentence structure,punctuation, and spelling 4. Analyze the ethical responsibilities involved in technical communication 5. Analyze an audience, both domestic and international, and write effective technical and business documents for that audience and locate, evaluate, and incorporate pertinent information
	PCENE18 - AMERICAN LITERATURE	1. Familiarize with the American life and Culture against the background of History and Literary development 2. Understand the American Literary artists, who were innovative in their outlook and literary temper. 3. Identify key ideas, representative authors and works, significant historical or cultural events, and characteristic perspectives or attitudes expressed in the literature of different periods or regions 4. Analyze literary works as expressions of individual or communal values within the social, political, cultural, or religious contexts of different literary periods 5. Write research-based critical papers about the assigned readings in clear and grammatically correct prose, using various critical approaches to literature 6. Imbibe intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities

	PCENF20 - LITERARY CRITICISM	1. Remember and Understand the works of seminal literary critics 2. Understand critical concepts and literary genres through literary criticism 3. Apply Critical concepts to literary texts 4. Examine the works of seminal literary critics 5. Analyse lierary texts and critical works 6. Evaluate literary texts based on critical ideas acquired from seminal works
	PCENG20 - LANGUAGE AND LINGUISTICS	1. Recognize the structure, function and varieties of language 2. Demonstrate knowledge of the English language in terms of its history, structure, acquisition and applications 3. Understand the speech mechanism of language 4. Demonstrate knowledge of the sound structure of the English language and pronounce English vowels and consonants individually and in connected speech accurately 5. Distinguish and accurately enunciate voiced and voiceless sounds 6. Demonstrate knowledge of the characteristics of connected speech with an eye for nuances like stress, intonation, Assimilation and Elision 7. Transcribe words and dialogues in English phonetically 8. Demonstrate scientific knowledge of the multilingual context in India
	PCENH18 - WOMEN'SWRITING	1. Recognize and discuss aspects of women's writing 2. Locate diversity of women's experiences and their varied cultural moorings 3. Interpret different forms of literature: poetry, fiction, short fiction and critical writings 4. Analyse women's literary history and feminist criticism 5. Evaluate literary works by women 6. Develop research and essay writing skills.
	PEENC20 - POSTCOLONIAL LITERATURE	1. Trace the aspects of subjectivity, race, class and feminism in the Postolonial space 2. Understand how literature shapes ideas about society and social identities in interaction with other discourses such as history and politics 3. Analyse the history of Colonial rule, liberation movements in various nations and develop a critical thinking on the movement of Postcolonialism 4. Possess a coherent knowledge and a critical understanding of Postcolonial literature and its historical, cultural and theoretical developments. 5. Reinterpret and examine the values of literary texts, by focusing on the contexts in which they were produced, and reveal the colonial ideologies that are concealed within. 6. To identify the modes of representation where Europeans constructed natives in politically prejudiced ways, to unveil such literary figures,themes and representatives

		that have enforced imperial ideology, colonial domination andcontinuing Western hegemony.
	PEEND18 - LITERATURE OF THE MARGINALIZED	1. Understand the concept of 'marginalized' and 'subaltern' from the socio-cultural and literary context 2. Identify and analyze the themes of place, gender, class, caste, class and nationality in literature from subaltern perspective 3. Acquaint with subaltern theories and critically interpret the nuances of subaltern elements in literature 4. To apply comparative and analytical methodology to analyze the voice of marginalized recorded in literature from the global and local context 5. to innovate an oral and written form of interpretation on subaltern literature 6. To develop resource thinking, critical and creative writing on subaltern ideology
	PEENE20 - INDEPENDENTELECTIVE II A: LITERARY SKILLS FOR EMPLOYABILITY–II	1. Remember and recall names of authors, literary works, dates, facts, terms and concepts 2. Demonstrate knowledge of English Language and Linguistics 3. Apply knowledge of literary criticism to analyze literary works 4. Discover interest and demonstrate knowledge in literature in English outside Britain and America 5. Demonstrate knowledge in Application-oriented areas like Research Methodology, Translation and English Language Teaching 6. Develop effective strategies to prepare for competitive examinations
	PIEND19 - INDEPENDENT ELECTIVE II B: CREATIVE WRITING	1. Identify literary texts in multiple genres. 2. Understand how to describe critical ideas 3. Apply critical and theoretical approaches to the reading texts 4. Examine the relationship between the individual works and conventional literary work 5. Evaluate how ideas, themes and values create an impact on societies 6. Create poems or literary non-fictional pieces those are original and engaging
	PCENI20 - ROMANTIC AND VICTORIAN LITERATURE	1. Understand the nature of the Industrial Revolution, the subsequent scientific and material progress and to explore a society that was being re-organized around Science, Factories and Business. 2. Analyse and appreciate the interconnectedness of human life and nature as reflected in works written during the Romantic period. 3. Identify the major writers, their works in order to understand the concepts of Romantic and Victorian period. 4. Differentiate the traits of Romanticism and Victorianism in English literature with emphasis on concepts of self, imagination, and the unconscious.

		5. Evaluate the impact of Romanticism and Victorianism on the development of English literature, with emphasis on development of literary forms and literary modes of expression. 6. Connect the works of the Romantics and Victorians to their social and historical backgrounds and evaluate it
	PCENJ20 - SHAKESPEARE STUDIES	1. Develop an understanding of Elizabethan and Jacobean context in connection with the ideas of culture, history and politics of these periods 2. Understand and explore the language, key terms, concepts, dramatic genres and themes of Shakespearean theatre thus gaining an insight into the age of Shakespeare. 3. Analyze verbally and in writing Shakespeare as a product of his society 4. Read analytically to determine Shakespeare's purpose, historical and cultural perspective, and use of rhetorical and dramatic strategies in creatinga play. 5. Evaluate Shakespeare's contribution to the English language and to the development of the modern drama and recognize various theories of literary criticism applied to Shakespeare's plays
	PCENK20 - CONTEMPORARY CRITICAL THEORY	1. Infer the body of ideas and methods used for the reading of literature 2. Understand the role of historical context in the interpretation of literary texts 3. Identify suitable critical ideas for an accurate understanding of literary works 4. Compare and Contrast various critical theories and the practice 5. Examine various critical theories for their success, drawbacks and influence 6. Evaluate literary works using appropriate critical ides/concepts/theories
	PCENL20 - RESEARCH METHODOLOGY	1. Identify and contextualize research problems, 2. Develop research questions for qualitative and quantitative research 3. Formulate a hypothesis, write a research proposal and Plan out the research 4. Collect and catalogue data and gather the inference 5. Identify the tools specific to the research problem 6. Document the results of the research in an unambiguous and readable language in the prescribed format
	PEENF20 - ELECTIVE III A: TRANSLATION STUDIES	1. Demonstrate a systematic and historical knowledge of translation 2. Apply the knowledge of the theoretical principles in translation 3. Identify and describe the difference between types of translation 4. Translate literary and non-literary texts 5. Assess, compare and review translations 6. Apply the knowledge of translation studies in doing research
	PEENG20 - ELECTIVE III	1. Recognize the various literary genres and Literature written from various socio-

	B: LITERATURE FOR ACADEMIC AND PROFESSIONAL PURPOSES	political, cultural and historical backgrounds 2. Examine the transition and transformation of text, context, and theory in the literary scenario from period to period 3. Develop subject- specific academic writing skill, critical thinking and writing Skills 4. Demonstrate the mastery of answering the question in a competitive examination in English Literature 5. Acquaint with secondary sources in Literature and to demonstrate strategies for research 6. Exercise the comparative method of analysis to apply in oral and written form, the art of interpretative argument
	PIENE20 – INDEPENDENT ELECTIVE III A: LITERARY SKILLS FOR EMPLOYABILITY- III	1. Remember and recall names of authors, literary works, dates, facts, terms and concepts 2. Demonstrate knowledge of English Language and Linguistics 3. Apply knowledge of literary criticism to anlayse literary works 4. Discover interest and demonstrate knowledge in literature in English outside Britain and America 5. Demonstrate knowledge in Application-oriented areas like Research Methodology, Translation and English Language Teaching 6. Develop effective strategies to prepare for competitive examinations
	PIENF20 - ELECTIVE III B: CONTENT WRITING	1. To provide wider knowledge on different prospective areas 2. To cultivate technical writing Skills 3. To develop editing skills 4. To create analytic skills 5. To develop skills in publication and advertising 6. To encourage Freelance writing and entrepreneurship
	PCENM20 - LITERATURE OF THE MODERN AGE	1. Understand the relationship between literature and social structures. 2. Appreciate the masterpieces of literature of this literary period and to analyze formal and thematic aspects of modern age in the background of larger cultural and historical movements. 3. Recognize the broad spectrum of literary and artistic movements of the Twentieth century and thereby develop critical insight to comprehend the plots, characters and techniques in the literary works. 4. Gain insight into the major issues related to the cultural and social context of the 20th century. 5. Reinterpret and demonstrate knowledge of the major literary movements of the period. 6. Realize the degeneration of morality and human values in the modern age.

	PCENN20 - CONTEMPORARY WRITING	1. To provide ideas on the writing style of Contemporary writing 2. To provide critical understanding on contemporary writing 3. To provide wider knowledge about Contemporary writers 4. To inculcate innovative research attitude 5. To develop creative skills in writing 6. To develop wider reading interests
	PCENO20 - ENGLISH LANGUAGE TEACHING	1. Identify approaches to enable language learning and establish the feasibility of following a bilingual approach for the teaching of English. 2. Relate learning strategies to aid language learning to aid in comprehensibility. 3. Discover the concepts that relate and integrate content and language instruction for language acquisition. 4. Evaluate the characteristics of the approaches to enhance performance for best outcomes in language learning. 5. Design activities that allow learners to practice academic language and to develop second language acquisition at the best of the student's ability. 6. Create a resource bank of language teaching strategies, ideas and techniques to be used for English Language teaching.
	RESEARCH PROJECT	1. Demonstrate research aptitude in Literature and Language teaching 2. Ability to research and to evaluate evidence in Literary context and teaching methods 3. Ability to use relevant sources of scientific evidence to construct a well-supported, logical argument, 4. Skill in critical thinking and expository writing based on relevant and contemporary approaches and methods 5. Undertake research independently 6. Demonstrate a capacity to communicate research results clearly, comprehensively and persuasively.
	PEENH20 - Elective IVA: HISTORY OF IDEAS	1. Earn the research skills necessary to conduct a course of study across ideological boundaries 2. Students will learn to independently read and comprehend texts, so as to identify and state the central theses and to reconstruct the key arguments in the texts 3. Demonstrate familiarity with key texts, ideas, or discipline, and evaluate the legacy and influence of classical thought and culture in contemporary discourses, whether political, moral, aesthetic, scientific, ecological, humanist, post-humanist, etc 4. Cultivate the habit of thinking across disciplines—philosophy, psychoanalytic, aesthetics, memory studies, translation, gender, and politics in order to achieve a

		holistic understanding of cultures and societies 5. Knowledge of and ability to apply methods of critical and social analysis from anthropology, Psychology, sociology, political science, economics, literature, arts, and/or history to the study of Literature 6. Ability to analyze both primary and secondary source readings by identifying the main argument or thought, placing it in context, and interpreting it critically based on the logic, scientific reasoning and evidence presented 7. The development of critical thinking and a refined set of skills in analytical thinking, problem-solving, persuasiveness and academic writing.
	PEENI20 - ELECTIVE IV B: CULTURAL THEORY AND POPULAR CULTURE	1. Recognize the role of Culture in human thought, expression and art 2. Remember the names of the thinkers who initiated the cultural turn in analyzing all the productions of the human mind and both individually and collectively, and their contribution to cultural studies 3. Analyse literary and other related art forms in cultural perspective 4. Apply Cultural Theory as a research methodology
	PIENG20 - INDEPENDENT ELECTIVE IV A: LITERARY SKILLS FOR EMPLOYABILITY –IV	1. Remember and recall names of authors, literary works, dates, facts, terms and concepts 2. Demonstrate knowledge of English Language and Linguistics 3. Apply knowledge of literary criticism to anlayse literary works 4. Discover interest and demonstrate knowledge in literature in English outside Britain and America 5. Demonstrate knowledge in Application-oriented areas like Research Methodology, Translation and English Language Teaching 6. Develop effective strategies to prepare for competitive examinations
	PIENH20 - INDEPENDENT ELECTIVE–IV B: LITERATURE AND ENVIRONMENT	1. Explore various eco-critical perspectives through nature studies 2. Engage with environmental issues through literary narratives 3. Understand about the ecological degradation and various natural calamities that affect the planet earth due to the reckless nature of human beings 4. Develop critical awareness about sustainability practices 5. Identify environmental issues via historical narratives 6. Critically examining the role of literature in promoting Ecojustice for environmental conservation
Tamil	ULTAA20- General Tamil I	1. மனித உரிமை சார்ந்த செய்திகளை அறிதல். 2. இக்கால மரபுக்கவிதை முதல் அயலகத்தமிழ் கவிதைகள் வரை எடுத்துரைத்தல்.

		3. சான்றோர்களின் வாழ்க்கை வரலாற்றை அறியச் செய்தல். 4. மொழியை பிழையின்றி எழுதவும், பேசவும் கற்பித்தல். 5. பொது அறிவுத் திறனை வளர்த்தல்.
	ULTAB20- General Tamil II	1. சைவ இலக்கியங்கள் முதல் இக்கால பக்தி இலக்கியங்கள் வரை அறிதல். 2. தலவரலாறுகள் மூலம் தமிழகக் கோவில்கள், சிற்பங்கள், கலைகள், கல்வெட்டுகள் போன்றவற்றை விளக்குதல். 3. சமய நல்லிணக்க உணர்வை வளர்த்தல். 4. பிழையின்றி பேசவும், எழுதவும் அறிந்துக் கொள்ளல். 5. பொதுஅறிவுத் திறன்களைப் பெறுதல்.
	ULTAC20 General Tamil III	1. சங்க இலக்கியங்கள் முதல் சங்கம் மருவிய கால இலக்கியங்கள் வரை அறிதல் 2. தன் வரலாறுகள், குறுநாவல், உரைநடை போன்றவற்றை விளக்குதல் 3. வாழ்வியல் திறன்களை வளர்த்தல் 4. அறநெறி உணர்வை எடுத்துரைத்தல் 5. பிழையின்றி பேசவும் எழுதவும் செய்தல் 6. பொதுஅறிவுத் திறன்களைப் பெறுதல்.
	ULTAD20- General Tamil IV	1. கேட்டல், எழுதுதல், பேசுதல், வாசித்தல் (LSWR) முதலிய மொழித் திறன்களை அறிமுகப்படுத்துதல் 2. மொழித் திறன்களை வளர்த்தல் 3. வேலைவாய்ப்புக் குறித்த சிந்தனைகளை ஊக்குவித்தல்

HINDI		
FRENCH	ULFAA20- FRENCH PAPER –I	1. Express self and participate in conversations on familiar topics 2. Communicate in contexts relevant to oneself, others, work place and place of study 3. Recognize and use culturally appropriate vocabulary, expressions and gestures 4. when participating in everyday interactions 5. Demonstrate knowledge of the grammatical structures of French 6. Construct simple texts on familiar topics like family, city and personal interests
	ULFAB20- FRENCH PAPER -II	1. Express oneself and provide personal details using simple connectors 2. Comprehend and apply vocabulary related to family, transport, daily Activities 3. Communicate orally and in written form in limited social situations 4. Demonstrate knowledge of cultural differences 5. Apply basic grammatical structures to write simple texts
	ULFAC20- FRENCH PAPER-III	1. Express a wish and talk about vacations 2. Comprehend and apply the prepositions of places and talk about transport 3. Communicate in a polite manner and ask appropriate questions 4. Demonstrate the ability to speak about favourite animals, friends, family 5. Apply the future tense to talk about projects
	ULFAD20- FRENCH PAPER-IV	1. Present our house and describe our ideal room 2. Narrate your passions and write a poem 3. Ability to compose a menu and write a original recipe in French 4. Describe the physical traits of a person 5. Understand money matters and how to spend pocket money
URUDU	ULUAA20- PROSE, GRAMMAR &LETTER WRITING	1. Students will acquire the required academic efficiency 2. They will be learning the techniques of exemplary writing. 3. They will develop ability to foster fast reading of Texts.
	ULUAB20- MANZOOMATH, GHAZALIATH & TRANSLATION	1. Students will be able to expand the frontiers of their creative intellect. 2. Their fascination for Literature will get doubled or tripled. 3. The translation skills will help them professionally.
	ULUAC20- AFSANA, MAZMOON NAWESI & MUKALAMA	1. Students will care more for Non-Detailed Texts on par with Detailed Texts. 2. They will sharpen necessary skills to draft essays on varied themes. 3. They will succeed in their official routine with their ability to translate.

	NIGARI	
	ULUAD20- DRAMA, RUBAYIATH & HISTORY OF URDU LITERATURE	1. Students will learn to excel in the art of reading Plays. 2. They will hoan their faculty of imagination. 3. They will emerge as exponents of good conversation.
B.A. HISTORY	UCHIA20- MAIN CURRENTS IN INDIAN HISTORY FROM EARLY TIMES TO 1526 A.D	1. Discuss the important events in chronological order and interpret the events critically in History 2. Acquire Knowledge on the Geographical features of India to work for sustainable development 3. Gain knowledge about the Indus-Valley, Vedic and Later Vedic Civilization to appraise the values of multi cultures in India 4. Explore the cause for the rise of Buddhism and Jainism in India to become the agents of social change 5. Acquire Knowledge on Administration Art and Architecture of Delhi Sultanate 6. Critically analyze the impact of Bakthi Movement in India
	UCHIB20- MAIN CURRENTS IN INDIAN HISTORY FROM 1526 A.D TO 1707 A.D	1. Acquire the Knowledge of the condition of India on the Eve of Babur's Invasion and analyze the development of Indian Culture, 2. Acquire the Knowledge of Reforms of Akbar and its impact in today's Administration 3. Compare the Mughal Art and Architecture with the Modern Art. 4. Analyze the Socio-Economic Condition of the Mughal Period and its impact today. 5. Recognize and Criticize the factors that led to the Downfall of the Mughal dynasty
	UATMA20– ALLIED TOURISM -I	1. Understand the evolution of travel and tourism in the historical context. 2. Analyze tourism sector within socio, economic, political and cultural aspects of society. 3. Attain professional and technical skills for effective work and integration. 4. Identify the networks and relationships for tourism capacity building. 5. Apply problem solving skills and critical analysis within the multi diverse context
	UCHIB20- HISTORY OF INDIA FROM 1707 TO 1858 A.D	1. Acquire Knowledge on the advent of the Europeans and their Settlements in India and analyze their impact in Indian Culture. 2. Acquire the Knowledge of the Administration and Reforms of Warren Hastings and Lord Cornwallis to become effective leaders.

		3. Recognise the social reforms of Lord William Bentinck to become the agents of social change 4. Understand the Reforms of Lord Dalhousie and its impact in the Indian administration for the betterment in the present 5. Evaluate the revolt of1857 and further change in the Indian Administration
	UCHID20- HISTORY OF INDIA FROM 1858 TO 1947 A.D	1. Assess the condition of India after the Queen Victoria's proclamation to gain analytical thinking 2. Compare the administration of Lord Ripon with Lord Curzon and analyze its impact in present day 3. Critically analyze the impact of the Social reforms of the 19th Century. 4. Trace the various causes for the rise of National Movements in India to become effective leaders 5. Recognize the role of M.K. Gandhi in Freedom Struggle to commit oneself for social Justice 6. Trace the Causes responsible for the Partition of India and Pakistan to respect diversity and other constitutional values
	UATMB20: TOURISM –II - ALLIED-II	1. Develop leadership quality and become anentrepreneur. 2. Understand tourism practices locally and globally. 3. Attain knowledge on theemergence of tourismindustryanditsimpact on thegrowth of nation. 4. Develop and evaluate tourismpolicy for betterment of tourismindustry. 5. Understand tourismasaphenomenonaswellasabusinesssystem
	UCHIE16- AN OUTLINE HISTORY OF TAMILNADU UPTO 1565 A.D	1. Gain knowledge on the available Sources for the Ancient History of Tamil Nadu and Topographical division of Sangam Age. 2. Gain Knowledge about the Chera, Chola and Pallava Kingdoms its Socio, Economic and Cultural Condition of the Sangam Age and its impact on the development of Tamil Culture 3. Enhance knowledge on the Contribution of the Pandyas and the Pallavas Religion, Art and Architecture to the betterment of present time. 4. Analyze the Contribution of the Imperial Cholas and the Later Pandyas in the field of Local Administration. 5. Acquire Knowledge about the travel accounts of Marcopolo and Abdul Wasuf and create respect for diversity
	UEHIA20- HISTORY OF MODERN ASIA	1. Gain Knowledge on the causes and the consequences of Nationalism in the Asian Countries.

	(1900 A.D TO 2000 A.D) (EXCLUDING INDIA, CHINA, BHUTAN, JAPAN AND WEST ASIA)	2. Analyze the circumstances for the formation of the New Countries. 3. Acquire Knowledge on the role of the Leaders in the formation of the New Countries and form to become an effective leaders and communicators. 4. Possess Knowledge on the effective foreign policies with other Asian Countries and to built relationship with diverse group. 5. Gain Knowledge on the Formation of Organizations for the Welfare of Asian Countries.
	ELECTIVE I B UEHIA20-INTERNATIONAL RELATIONS (1945 TO 2000 A.D)	1. Gain Knowledge on the origin, function and the achievements of the UNO and become the agents of Social Change 2. Analyze the effects of the Cold War and its impact on the International relationship 3. Enhance knowledge on the origin, structure and functions of SAARC, Common Wealth, European Union and WTO to become the builders of Peace. 4. Analyze the disintegration of USSR and its impact on the Countries. 5. Acquire Knowledge about the Apartheid policy and gains Human values in equality, freedom and diversity
	UAPSA20: PRINCIPLES OF SOCIOLOGY	1. To analyze the relationships between individuals and society. 2. To apply the basic concepts of sociology to understand the social events/ phenomena. 3. To understand the differences and stratification of society in sociological aspects/ context. 4. To gain multi cultural and global understanding on social mobilization. 5. To analyze the influences of social institution in the process of socialization
	USSOA315 – NGOs and RURAL DEVELOPMENT	1. Understand the implications of NGOs in rural development. 2. Gain knowledge into the socio economic structure of rural India. 3. Understand the problems and prospects of rural development in India. 4. Make them to join in rural development organizations 5. Understand the rural social problems in sociological context.
	UCHIF20-AN OUTLINE HISTORY OF TAMILNADU FROM 1565 TO 1987 A.D	1. Acquire Knowledge on administration of Sethupathis and Thondaiman's in the Tamil Region. 2. Remember the events leading to the European settlements in Tamil Nadu and impact of Colonial administration on the Tamil Society. 3. Analyze the contribution of Christian Missionaries to the Society and Education and its impact to present and visualize the future. 4. Compare the South Indian Rebellion with the Vellore Mutiny.

		5. Possess Knowledge of the role of Tamilnadu in freedom struggle and create respect for freedom, diversity and other constitutional values.
	UCHIG20- CONTEMPORARY INDIA FROM 1947 TO 2000 A.D	1. Gain Knowledge on the role of Prime Ministers in Indian Polity to understand the Indian Polity System 2. Enhance the Knowledge on the Foreign Polices of India in turn effectively built relationship with diverse group 3. Analyze India's relation with neighboring Countries to present and to visualize the future 4. Gain Knowledge on the various internal issues in India to predict the future and to become the agents of Social Change 5. Possess knowledge on the development of Science and technology in India for Sustainable Development
	UAISP20- ALLIED IV : SOCIAL PATHOLOGY	1. Apply the sociological approaches in understanding social problems. 2. Assess themselves within social contexts. 3. Understand the causes and effects of social deviance. 4. Understand and analyze various levels of social situation. 5. Apply sociological and critical analysis of social issues in policy making and capacity building.
	USHIA416-HISTORY OF VELLORE	1. Gain Knowledge on the Historical importance of Vellore District 2. Gain Knowledge on the Historical changes and the administration of Nayak and Nawabs to visualize the Future 3. Attain Knowledge on the Administration of British Rule and their impact on Indian Culture 4. Understand the importance of archaeological research in the historical context 5. Possess Knowledge on the contribution of Christian Missionaries and their services for the upliftment of downtrodden people and to become the agents of the social change.
	UCHIH20 -HISTORY OF EUROPE FROM 1789 TO 1945 A.D	1. Analyze the results of the French revolution and evaluate its impact in Present day political system 2. Gain Knowledge on various reforms introduced by Napoleon Bonaparte to become an effective leader 3. Evaluate the causes for the outbreak of World War and to become critical thinkers 4. Analyze the role of Hitler and Mussolini in the World War to commit oneself for social Justice

		5. Possess Knowledge of League of Nations & UNO to create respect for basic human values and freedom 6. Apply critical thinking and problem solving skill with regard to political issues in the world level.
	UCHII20- HISTORY OF ANCIENT CIVILIZATION (EXCLUDING INDIA)	1. Understand the World Civilizations in the holistic perspective for the betterment of the Future 2. Analyze the Legacy of Various Civilizations of the World and their contribution to the Future 3. Compare the Early Civilizations with Modern Civilization and to become the Agents of the Social Change 4. Gain Knowledge on the contribution of the Philosophers to the World and to become effective leaders and communicators 5. Analyze the Ancient Politics with Modern World to become the agents of the Social Change.
	UCHIJ20 -INDIAN ARCHAEOLOGY	1. Understand the contribution of Western Archaeologist in the field of Indian Archaeology 2. Acquire the knowledge of Scientific Techniques and Method of Excavation 3. Analyze the Stone Age and Megalithic Culture in India 4. Enhance the knowledge on the origin and development of Numismatics, Paleography and Epigraphy 5. Posses the knowledge of the excavated sites in Tamil Nadu and growth of Museums.
	UEHIC20-ELECTIVE: II A-WOMEN'S STUDIES	1. Gain Knowledge of the status of Women through the ages 2. Recognize the evolution of Women's rights and its impact in the life of every woman 3. Critically analyze the importance of the international Women's Conference and National Commission for Women in India. 4. Possess knowledge of the Central and State Government policies and schemes for women in India and make it known 5. Understand the role of eco-feminist and Women Environmentalists in sustainable development
	UEHIC20-INTELLECTUALS OF INDIA	1. Understand the contribution of social intellectuals in the field of social reformation. 2. Gain knowledge on the political intellectuals and form to become an effective leaders.

		3. Compare the contribution of women intellectuals and analyze its impact to present and visualize the future. 4. Enhance the knowledge on the scientific and Economic intellectuals and their contribution in the nation building. 5. Posses the knowledge of the role played by the intellectuals in TamilNadu.
	USHIB516-INTRODUCTION TO COMPETITIVE EXAMINATION	1. Gain the Knowledge of Ancient, Medieval and Modern India. 2. Acquire Knowledge of Geography, Economy of India and appraise its impact in the development of India 3. Analyze the role of student in preservation of Heritage Sites of India. 4. Gain knowledge on the Basics of Computer and apply in day today carrier advancement 5. Understand the Memory and Inductive Reasoning for Current Affairs and its significance for competitive exams.
	UCHII20- HISTORY OF JAPAN UPTO 1990 A.D	1. Gain Knowledge on the Early History of Japan for the betterment of Future 2. Recognize the contact of Japan with the European Countries to build relationship with diverse group 3. Analyze the Japanese identity during the World War I and II and its impact to present and to visualize the future 4. Possess Knowledge of the Emergence of Japan as the World Powers and became the agents of Social Change. 5. Gain Knowledge in the post war development of Japan and their relationship with diverse group.
	UCHIL20 – THE HISTORY OF UNITED STATES OF AMERICA FROM 1776 TO 1965 A.D	1. Acquire Knowledge on the exploration and Discovery of America to the betterment of the present and future 2. Recognize the evolution and development of America under Montroe Doctrine, Westward movement and Manifest destiny 3. Appraise the role played by Abraham Lincoln in Civil war to create respect for equality, freedom and respect for diversity 4. Analyze critically the foreign and domestic policy of Theodore Roosevelt, Woodrow Wilson, Harry S.Trueman, Dwight D. Eisenhower and John F. Kennedy 5. Assess the role of F.D Roosevelt with the implementation of New Deal during depression and commit oneself for Social justice and sustainable development
	UCHIM20- INDIAN POLITY AND	1. Understand the Emergence and Evolution of Indian Constitution. 2. Analyze the historical background of the constitution and administration

	CONSTITUTION	structure 3. Attain Knowledge on Indian Polity System. 4. Enhance knowledge on salient features of Indian Constitution 5. Understanding social responsibilities for making sustainable nation.
	UEHIE20: ELECTIVE: III A-GEOGRAPHY OF INDIA	1. Possess knowledge on the foundation of Geography and its application in day today's context 2. Understand the Themes, Traditions and types of Geography 3. Recognize the evolution of the physical features of India 4. Acquire the knowledge of Natural Resources to commit oneself for Sustainable Development 5. Enhance knowledge on the prevention of Disaster and Relief measures available in India to create respect for Human Values
	UEHIE20-MONUMENTS IN INDIA	1. Understand the Significance of Preservation Acts and contribute to its Preservation 2. Analyze the influence of Religious Monuments and Significance of Indian Architecture 3. Enhance knowledge on the workmanship of Artisans 4. Gain Knowledge about the means to preserve Historical Monuments. 5. Acquire Knowledge about the patronage of Kings to Indian Culture
	SKILL BASED ELECTIVE USHIC616-ARCHIVES KEEPING IN INDIA	1. Acquire the Knowledge of Definition, Scope and Types of Archives and apprise it. 2. Enhance Knowledge on Documentation Methods of Early Times with today's Documentation and its importance 3. Analyze the Methods of Preservation of Records and enhance Preserve Pubic and Personal Records 4. Gain the Knowledge of the History of Indian Archives Keeping, and Value it significance 5. Acquire Knowledge of Tamil Nadu Archives Keeping and its Functions
	UGHIA520/ UGHIA620- NON MAJOR ELECTIVE TRAVEL AGENCY AND TOUR OPERATIONS BUSINESS	1. Understand the Evolution of Tourism and travelling in the Historical context. 2. To analyze Tourism Sector within Socio, Economic, Political and Cultural aspects of society and sustainable development of India. 3. Acquire the knowledge on Ministry of Tourism, Travel Corporation and its function in the day today situation. 4. Gain knowledge in Major Tourist Destination in the World. 5. Possess knowledge of the Hospitality Industry and in turn effectively build

		relationship with diverse group.
	UGHIB20 -NON-MAJOR ELECTIVE: HISTORY OF INDIAN CONSTITUTION	1. Gain Knowledge on the growth of Legislatures during the British Period 2. Acquire Knowledge on the Nature& the special features of the Indian Constitution 3. Enhance Knowledge on the Rights and Duties of the Indian Constitution in the Present Situation 4. Understand the Legal Structure of Indian Political System and became the Agents of Social Change 5. Analyze the functions of the Indian Judiciary System and become the Agents of Social Change
	UGHIC20- Non Major Elective (NME) DEMOCRACY AND ETHICS	1. Attain civic and political consciousness. 2. Act as agents of change in society. 3. Engage critically with different conceptions of Social Justice 4. Become a more active democratic citizen. 5. Gain knowledge on Democracy and Indian Constitution.
B.Sc.MATHEMATICS	UCMAA20 – ALGEBRA AND TRIGONOMETRY	1. Perceive the fundamental concepts in the theory of equations. 2. Solve various types of higher order equations. 3. Know about matrices and their applications. 4. Solve problems involving trigonometric functions. 5. Analyse and relate hyperbolic and circular functions.
	UCMAB20 – CALCULUS	1. Calculate the radius of curvature, centre of curvature, Evolutes and Involutes. 2. Understand and find the asymptotes of rational curves. 3. Determine the area and volume by applying the technique of double and triple integrals. 4. Determine and use various techniques to solve the variety of integration problems. 5. Evaluate beta and gamma functions and apply beta and gamma functions in double and triple integrals.
	UCMAC20 – VECTOR ANALYSIS AND FOURIER SERIES	1. Compute divergence, curl, directional derivatives and Gradients. 2. Calculate the unit normal and tangent to the surface. 3. Evaluate line integrals, surface integrals and volume integrals using vector integration. 4. Verify and Apply Green’s Theorem, Gauss divergence Theorem, Stoke’s Theorem. 5. Understand the nature of the Fourier series and find the Fourier coefficients.

	UCMAD20 – DIFFERENTIAL EQUATIONS AND LAPLACE TRANSFORMS	1. Solve the standard forms of first order differential equations. 2. Solve the second order differential equations with constant coefficients and variable coefficients. 3. Find the complete, singular and general integral of PDE. 4. Analyse the properties of Laplace Transforms. 5. Solve differential equations using Laplace Transforms.
	UCMAE20 – SOLID GEOMETRY	1. Comprehend the basic concepts of plane and derive the condition for the homogeneous equation of second degree to represent a pair of planes. 2. Express the equation of a line in symmetrical form and understand the concept of skew lines to find the shortest distance between them. 3. Determine the equation of sphere under given conditions. 4. Compute the equation of a cone using a given vertex and a guiding curve and derive the condition for the general equation of the second degree to represent a cone. 5. Understand the concept of right circular cone, enveloping cone and reciprocal cone. 6. Find the equation of a cylinder with a given generator and a guiding curve and understand the concept of right circular cylinder and enveloping cylinder. 7. Express the enveloping cylinder as a limiting form of an enveloping cone.
	UCMAF20 - STATICS	1. Familiarize with subject matter, which has been the single centre, to which mathematicians, physicists, astronomers, and engineers were drawn together. 2. Understand necessary conditions for the equilibrium of particles acted upon by various forces and learn the principle of virtual work for a system of coplanar forces acting on a rigid body. 3. Understand the reduction of force system to a resultant force acting at a base point and a resultant couple, which is independent of the choice of base of reduction. 4. Understand static friction that exists between a stationary object and the surface on which it is resting. 5. Construct centre of gravity of some materialistic systems. 6. Apply the knowledge and skills to solve specific theoretical and applied problems.
	UAMSA20 – MATHEMATICAL STATISTICS I	1. Comprehend the fundamentals of probability. 2. Know about random variables of one and two dimensions. 3. Learn about the measures of central tendency and concepts of moments.

		4. Acquire knowledge about discrete and continuous distributions. 5. Apply correlation and regression for the investigation of relationship between the variables.
	USMAA320 – NUMERICAL METHODS	1. Understand the operators of finite differences and express any value of y in terms of yn and the backward differences of yn. 2. Apply interpolating techniques for equal intervals by Newton's method. 3. Apply central difference formulae to get the intermediate values of given data. 4. Apply interpolating techniques for unequal intervals by divided difference formula and Lagrange's interpolation formula. 5. Evaluate the gradient at any point of a graph using numerical differentiation and find the area under curved surface, velocity, etc. using numerical integration.
	UCMAG20 – OPERATIONS RESEARCH	1. Translate the real-world problems into the mathematical equations and obtain solutions. 2. Apply the transportation problem techniques for optimization of cost. 3. Handle assignment problem which deals with the allocation of various resources to various activities on one-one basis. 4. Use Game Theory which resolves the situation of conflict in Business. 5. Perform Network Analysis (PERT & CPM) which helps to control, monitor the Business process and its work flow.
	UCMAH20-DYNAMICS	1. Familiarize with subject matter, which has been the single centre, to which mathematicians, physicists, astronomers, and engineers were drawn together. 2. Understand behaviour of motion of objects. 3. Understand simple harmonic motion and projectiles. 4. Express the effects of impact of spheres. 5. Demonstrate methods to locate central orbits. 6. Apply the knowledge and skills to solve specific theoretical and applied problems.
	UAMSB20 – MATHEMATICAL STATISTICS - II	1. Know the basic concepts of some advanced distributions. 2. Apply estimation theory to estimate the values of parameters. 3. Use appropriate sampling distributions for testing of hypothesis. 4. Apply chi-square test to find out the significant difference between expected and observed frequencies in one or more categories. 5. Use F-test to compare statistical model that has been fitted to a data that best fits the population from which the data was sampled.
	USMAB420 - R	1. Familiarize the basics of programming in R such as vectors, arrays, data frames,

	PROGRAMMING LANGUAGE	etc. 2. Use the Decision making-branching and looping statements in R programming. 3. Represent data and Interpret results through graphical tools in R. 4. Calculate basic statistical measures and fit standard distributions using R. 5. Understand and apply the programming concepts of R to perform tests of significance. 6. Understand and apply the programming concepts of R to perform Analysis of Variance.
	UCMAI20 – ABSTRACT ALGEBRA	1. Understand the concepts of groups and sub groups. 2. Know about normal subgroups, quotient groups, homomorphisms and isomorphisms. 3. Understand the concepts of automorphisms for constructing new groups from the given groups. 4. Have knowledge on concepts of ring theory. 5. Understand the concepts of maximal ideals, Euclidean rings and particular integral domain.
	UCMAJ20 – REAL ANALYSIS - I	1. Know the basic properties of the real line and real number system. 2. Understand the fundamentals of sequences and to calculate their limits. 3. Recognize the arithmetic properties of convergence and divergence of sequence and series. 4. Learn the properties of metric space and its type. 5. Know about continuous function and its reformulation.
	UCMAK20 – COMPLEX ANALYSIS	1. Know to define and give some of the important properties of complex analytic functions. 2. Learn certain elementary functions with special reference to the correspondence between certain portions of the z-plane and w-plane as determined by the relation between the function w and the independent variable z. 3. Become familiar with the integrals of analytic functions where many properties from calculus is carried over to complex case. 4. Expand the concept of sequence and series which plays a major part of calculus to the complex domain. 5. Learn to compute residues, which allow the determination of general contour integrals via the residue theorem.
	UEMAA20 – PROGRAMMING IN C	1. Understand the basics of programming in C such as tokens, data types, operators etc.

		2. Use the Decision making-branching and looping statements in C programming. 3. Handle the concept of arrays and the concept of the user defined functions. 4. Express the uses of structures and pointers 5. Understand and apply the programming concepts of C to problem solving. 6. Represent the outputs of programs visually in terms of well formatted text.
	UEMAB20 - ELECTIVE PRACTICAL I: C	1. Implement programs with branching and looping statements. 2. Write programs that perform operations using derived data types and functions. 3. Demonstrate a thorough understanding of arrays by designing and implementing programs that search and sort arrays. 4. Perform Matrix operations using C. 5. Use structures and pointers in C programs. 6. Identify and rectify errors in a C program.
	UEMAC20 – NUMBER THEORY	1. Learn about some important results in the theory of numbers including the prime number theorem, Chinese remainder theorem, Wilson's theorem and their consequences. 2. Learn about number theoretic functions, modular arithmetic and their applications. 3. Familiarize with modular arithmetic and find primitive roots of prime and composite numbers. 4. Know about open problems in number theory, namely, the Goldbach conjecture and twin-prime conjecture. 5. Apply public crypto systems, in particular, RSA.
	USMAC520 – MATHEMATICS FOR COMPETITIVE EXAMINATIONS	1. Understand the basic concepts of quantitative aptitude. 2. Apply the concepts of average, percentage, ratio and proportion to solve real life problems. 3. Think critically and solve problems. 4. Improve their creative thinking and make decisions in real life situations. 5. Determine the number of possible outcomes in a problem and calculate the probability of events for more complex outcomes. 6. Analyse and compare the given data to use analytic techniques that are simple and effective to solve problems. 7. Compete in various competitive exams.
	UCMAL20 – LINEAR ALGEBRA	1. Understand the concepts of basis, linear dependence and independence. 2. Analyse the concepts of dual spaces in vector space and inner product space. 3. Understand the concepts of linear transformation, characteristic roots and

		characteristic vectors. 4. Obtain the matrix for linear transformations. 5. Acquire knowledge about determinants, trace and transpose by linear transformations.
	UCMAM20 – REAL ANALYSIS - II	1. Understand some properties of metric spaces like openness, closedness, boundedness and totally boundedness. 2. Know the fundamental concepts of complete and compact metric space. 3. Apply the properties of Riemann integrable functions. 4. Assimilate the concept of partition on an interval in R and understand about lebesgue integrability. 5. Acquire knowledge about measurable functions and their properties.
	UEMAD20 – GRAPH THEORY	1. Understand the basic graph theory concepts 2. Analyse the connectedness in graphs using vertices and edges. 3. Identify the uniqueness of paths using tree concepts. 4. Acquire wide knowledge of mathematical principles of graphs 5. Understand the emerging research topics based on graphs
	UEMAE20 – DISCRETE MATHEMATICS	1. Learn about partially ordered sets. 2. Understand lattices and their types. 3. Understand Boolean algebra and Boolean functions, logic gates, switching circuits and their applications. 4. Solve real-life problems using finite-state and Turing machines. 5. Assimilate various graph theoretic concepts and familiarize with their applications.
	UEMAF20 – OBJECT ORIENTED PROGRAMMING USING C++	1. Understand the basics of programming in C++ such as tokens, data types, operators etc. 2. Use the Decision making-branching and looping statements in C++ programming. 3. Handle the concept of arrays and the concept of the user define functions. 4. Express the uses of structures and pointers. 5. Understand and apply the programming concepts of C to problem solving. 6. Represent the outputs of programs visually in terms of well formatted text.
	UEMAG20 – ELECTIVE PRACTICAL II: C++	1. Implement programs with class and constructors. 2. Write programs that perform operations using derived data types and functions. 3. Demonstrate a thorough understanding of arrays by designing and implementing

		programs that search and sort arrays. 4. Use inheritance properties that promote code reuse in C++. 5. Overload functions and operators in C++. 6. Identify and rectify errors in a C++ program.
	USMAD620 – FUZZY SET THEORY	1. Distinguish between classical crisp set and fuzzy set using characteristic function and membership function respectively. 2. Understand the operations on the fuzzy set which are generalization of crisp set operations. 3. Represent the notion of fuzzy relational equations based upon the max-min composition. 4. Model fuzzy graphs which provides provision to represent different types of relationships 5. Know about the fuzzy number which is a special form of a fuzzy set on the set of real numbers.
	UCBAB20 – BUSINESS MATHEMATICS AND STATISTICS - I	1. Apply the concept of matrices in solving business problems. 2. Analyse and demonstrate differentiation skills in economics and business. 3. Apply graphical methods to interpret statistical data. 4. Apply the statistical techniques in business. 5. Solve a range of problems using the techniques covered.
	UCBAD20 – BUSINESS MATHEMATICS AND STATISTICS – II	1. Understand mathematical applications in finance. 2. Demonstrate mathematical skills like integration required in economics and business. 3. Comprehend critical thinking and problem solving skills in correlation and regression. 4. Interpret numerical information that forms the basis of index numbers in business. 5. Analyze the theoretical concepts, tools and methods of probability.
	UCBAG20 – OPERATIONS RESEARCH - I	1. Understand and solve linear programming problems. 2. Identify and develop the operational research models such as graphical and simplex method. 3. Comprehend advanced linear programming problems using Big M method. 4. Construct and solve transportation models and assignment models. 5. Analyze and evaluate assignment models.
	UCBAI20 –OPERATIONS RESEARCH - II	1. Utilize the concepts of Operation research in real life experiments. 2. Plan the Sequencing of jobs through machines.

		3. Evaluate the critical path and project duration in CPM. 4. Compute the Probability of meeting the scheduled dates in PERT. 5. Compare CPM and PERT. 6. Acquire the solutions for Game of two players in Game theory. 7. Analyze the queuing theory for single channel problems.
	UABMA20 – BUSINESS MATHEMATICS AND STATISTICS	1. Apply the knowledge in matrices in solving business problems. 2. Analyse and demonstrate differentiation skills in economics and business. 3. Apply statistical and graphical techniques wherever relevant. 4. Apply the concepts, tools and techniques in business statistical analysis. 5. Solve a range of problems using the techniques covered.
	UASOR20 – BUSINESS STATISTICS AND OPERATIONS RESEARCH	1. Measure the scale of association between two variables. 2. Gain practical knowledge of correlation and regression. 3. Develop mathematical skills to optimize transportation and assignment problem. 4. Learn the ideas of possible outcomes. 5. Propose the best strategy using decision making methods under uncertainty and game theory. 6. Understand the basic concepts of index numbers.
	UAMAA20 – ALLIED MATHEMATICS - I	1. Understand the basic concepts of matrices 2. Apply the theory of equations and find roots using Newton's and Horner's method. 3. Acquire problem solving skills in trigonometry. 4. Compute radius of curvature, centre of curvature, evolutes and involutes. 5. Apply the techniques of integral calculus.
	UAMAB20 – ALLIED MATHEMATICS - II	1. Understand the use of vector calculus in science and engineering. 2. Find the complete, singular and general integral of partial differential equations. 3. Understand the applications of Green's, Gauss divergence and Stoke's Theorems. 4. Understand the basic concepts of Laplace Transforms. 5. Solve differential equations using Laplace Transforms. 6. Determine the nature of the Fourier series and find its coefficients
	UANAA20 – NUMERICAL ANALYSIS - I	1. Understand the operators and their properties, form a forward and backward difference table. 2. Execute interpolation methods using forward and backward differences when the data is equally distributed. 3. Exhibit interpolation procedures using central differences when the data is

		equally distributed. 4. Use divided differences for interpolation when the data is unequally distributed. 5. Implement curve fitting and method of moments.
	UANAB20 – NUMERICAL ANALYSIS - II	1. Obtain numerical solutions of algebraic and transcendental equations. 2. Find numerical solutions of system of linear equations. 3. Use numerical methods to do differentiation. 4. Use numerical methods to do integration. 5. Solve ordinary differential equations using numerical methods.
	UACAA20 – MATHEMATICAL FOUNDATIONS	1. Understand the concepts of Mathematical logic. 2. Compute the operators on Symbolic logic. 3. Acquire knowledge about relations and functions. 4. Assess real life simple problems with permutation, combination and probability. 5. Know about matrices and their types. 6. Differentiate standard trigonometric functions.
	UCCAG20 – STATISTICAL METHODS	1. Analyse the statistical data using measures of central tendency and graphs. 2. Provide an overall description of a set of data using measures of dispersion. 3. Apply the concept of regression and correlation in business problems. 4. Make decisions using hypothesis testing. 5. Apply the Chi-square test for independence as well as goodness of fit.
	UABSA20 – BIOSTATISTICS - I	1. Frame a relevant frequency distribution for a given biological data. 2. Determine mean, median, mode for biological data. 3. Compute measures of dispersion. 4. Understand probability concepts. 5. Gain knowledge of correlation and regression and its applications.
	UABSB20 – BIOSTATISTICS - II	1. Apply probability distributions such as Binomial, Poisson and Normal to solve real life problems. 2. Recognize the importance of data collection and its role in determining scope of inference. 3. Execute the test of hypothesis for large and small samples drawn from a normal population. 4. Perform and apply Chi-square test 5. Carry out analysis of variance using F test.
	UAMST20 – MEDICAL STATISTICS	1. Solve basic mathematical problems using matrices 2. Use various differentiation techniques 3. Give graphical representation of statistical data

		4. Understand the concepts related to statistics 5. Analyze problems related to statistical measures
	UAORA20 – OPERATIONS RESEARCH	1. Understand the basic operations research concepts and solve linear programming problems. 2. Analyze real-life situation using transportation models. 3. Assign jobs to different machines using assignment models. 4. Use knowledge of Network Analysis in Hospital Administration. 5. Acquire wide knowledge in Game Theory.
	UGMAAn20 - MATHEMATICS FOR COMPETITIVE EXAMINATIONS	1. Gain critical thinking and numerical ability to solve problems. 2. Apply the concepts of quantitative aptitude to solve real life problems. 3. Interpret and use data represented in different forms 4. Reason out verbally and non-verbally 5. Write various competitive exams for higher studies and jobs
M.Sc. MATHEMATICS	PCMAA20 - MODERN ALGEBRA	1. Assess the properties of Groups and Sylow'stheorem. 2. Apply field extension property in Algebraic extensions. 3. Get the knowledge of Transcendence e and roots of polynomial. 4. Know about the Galois Theory. 5. Have the knowledge on the concepts of solvability by radicals.
	PCMAB20 - REAL ANALYSIS – I	1. Understand n-dimensional space Rn and the metric space whose topology is uniquely determined by algebraic structure. 2. Deal with the functions of bounded variations and some of its properties. 3. Know about Riemann-Stieltjes integral and its properties which is a generalization of the Riemann integral. 4. Recognize the necessary and sufficient conditions for existence of R-S integral. 5. Grasp the class of Lebesgueintegrable functions which is defined in terms of upper and lower bounds using the Lebesgue measure of a set.
	PCMAC20 - COMPLEX ANALYSIS	1. Understand the theory of double sequences and double series which is an extension of the single or ordinary sequences and series and identify the convergence and divergence of infinite product. 2. Identify the Convergence of a sequences and series of functions. 3. Link the multiplication of power series, reciprocal of power series and real power series. 4. Determine the properties of fourier coefficient and Solve the problem for orthonormal system of functions.

		5. Deal with the concepts of Directional derivative, Total derivative, Chain rule, Inverse function and Implicit function theorems.
	PCMAD20 - DIFFERENTIAL EQUATIONS	1. Understand ordinary differential equations of various type, their solutions, and fundamental concepts about their existence. 2. Obtain solutions of the Homogeneous equation with constant coefficient and Homogeneous equation with analytic coefficient. 3. Comprehend the Bessel functions, Legendre equation, Legendre polynomials and Regular singular points. 4. Know Picard's method of obtaining successive approximations of solutions of first order differential equations. 5. Understand Eigen values and Eigen functions of Strum-Liovuille systems, and obtain the solutions of initial and boundary value problems.
	PEMAA20 – ELECTIVE I A:DIFFERENTIAL GEOMETRY	1. Understand the line integrals, deal with differential forms and calculate arc length, curvature of surfaces. 2. Analyze involutes, evolutes and fundamental existence theorem for space curves. 3. Apply problem solving with differential geometry to diverse situations in physics, engineering and in other mathematical contexts. 4. Evaluate the fundamental forms of a surface. 5. Compute the Gaussian curvature, the mean curvature, the curvature lines and the asymptotic lines.
	PEMAB20 - ELECTIVE I B:MATHEMATICAL MODELLING	1. Understand the mathematical basis of common algorithms, and the ability to calculate accurately and efficiently. 2. Demonstrate the use of mathematical reasoning by justifying and generalizing patterns and relationships between the variables in the mathematical models. 3. Formulate and qualitatively analyze mathematical models of a wide range of systems and processes. 4. Recognize the types of Mathematical models and the complexity in each system. 5. Recognize the power of mathematical modelling and analysis and be able to apply their understanding to their further studies.
	PIMAA20 – INDEPENDENT ELECTIVE 1 A: FUNDAMENTALS OF GROUP THEORY	1. Understand the importance of various types of Groups. 2. Extend the knowledge in some important groups (Homomorphism and Isomorphism) 3. Understand the concepts of fundamentals of finite abelian groups. 4. Acquire benefits of Sylows theorem and classify the Class equations. 5. Solve various objective type problems using simple concepts.

	PIMAB20 - INDEPENDENT ELECTIVE 1 B: QUANTITATIVE APTITUDE FOR COMPETITIVE EXAMINATIONS I	1. Understand the concepts of Number System and aptitude problems. 2. Recollect the formulae and solve problems on profit and loss, Interest and Time and Work. 3. Demonstrate basic understanding on data interpretation and exhibit eloquence in verbal reasoning. 4. Identify and respond effectively to questions on clerical ability. 5. Recognize the type of questions and answer them confidently with efficiency in grammar.
	PCMAE20 – LINEAR ALGEBRA	1. Have knowledge on Modules and Canonical form. 2. Analyze Jordan and Rational canonical form. 3. Understand the concepts of linear transformation and apply it on linear operators. 4. Understand the concepts of finite division ring. 5. Know about division rings having the field in their centers.
	PCMAF20 - REAL ANALYSIS - II	1. Understand the theory of double sequences and double series which is an extension of the single or ordinary sequences and series and identify the convergence and divergence of infinite product. 2. Determine the properties of Fourier coefficient and solve the problem for orthonormal system of functions. 3. Identify the Convergence of a sequences and series of functions. 4. Link the multiplication of power series, reciprocal of power series and real power series. 5. Deal with the concepts of Directional derivative, Total derivative, Chain rule, Inverse function and Implicit function theorems.
	PCMAG20 - PARTIAL DIFFERENTIAL EQUATIONS AND INTEGRAL PARTIAL DIFFERENTIAL EQUATIONS	1. Apply specific methodologies, techniques and resources to conduct research and produce innovative results. 2. Solve problems of heat conduction equation by using initial and boundary conditions. 3. Use the knowledge of PDEs, to solve one dimensional wave equation by canonical equation. 4. Solve practical PDE and integral PDE problems with finite difference methods. 5. Develop mathematical skills to solve problems involving convolutions.
	PCMAH20 – MECHANICS	1. Define and understand basic mechanical concepts related to discrete and continuous mechanical systems. 2. Describe and understand the motion of a mechanical system using Lagrange's equation.

		3. Use Euler-Lagrange equation to find stationary paths and understanding the theory of variational principles. 4. Acquire knowledge on Hamilton's principle and Hamilton's equation. 5. Study the concepts of canonical transformations and solve the transformations by using Lagrange and Poisson brackets.
	PEMAC20 - ELECTIVE II A:LATEX AND MATLAB	1. Understand the mathematical basis of common algorithms in Latex. 2. Demonstrate the use of mathematical equations, tables and figures in Latex. 3. Demonstrate understanding and use of MATLAB software 4. Construct one dimensional array, two dimensional arrays and basic functions in MATLAB. 5. Recognize the power of mathematical modelling and analysis using MATLAB and be able to apply their understanding to their further studies.
	PEMAD20 - ELECTIVE II B: FLUID DYNAMICS	1. Understand the concepts of fluid flow 2. Identify pressure of fluid in different kind of Motion 3. Analyse the topics of Axi-Symmetric Flows, Stoke's Stream Function 4. Determine the Stream Function, the Complex Potential for Two-Dimensional, Irrotational Incompressible Flow. 5. Explain the concepts the Rate of Strain Quadric and Principal Stresses ,Stress Analysis in Fluid Motion,the Coefficient of Viscosity and Laminar Flow, the Navier-Stokes Equations of Motion of a Viscous Fluid.
	PIMAC20 -INDEPENDENT ELECTIVE 2 A: FUNDAMENTALS OF RING THEORY	1. Demonstrate various characteristic of Rings. 2. Extend the knowledge in Ideals, Fields of Quotients and polynomial rings. 3. Validate primitive polynomials and Irreducible Polynomials. 4. Acquire the knowledge in Field theory. 5. Solve various types of problems in finite fields.
	PIMAD20 -INDEPENDENT ELECTIVE 2 B: QUANTITATIVE APTITUDE FOR COMPETITIVE EXAMINATIONS II	1. Understand and solve aptitude problems. 2. Identify and develop the techniques to solve the problems using different methods. 3. Demonstrate procedural fluency with real number arithmetic operations and use those operations to represent real-world scenarios and to solve stated problems. 4. Solve linear equations, graph and interpret linear models, and read and apply formulas. 5. Ability to face the competitive examinations with a clear approach.
	PCMAI20 - TOPOLOGY	1. Understand basis as a collection of basic open sets and the concepts of continuous functions and their properties in topological spaces.

		2. Determine the topology generated by the given basis, connectedness, path connectedness of the product of an arbitrary family of spaces. 3. Grasp the concept of compactness which is the generalization to topological spaces of the property of closed and bounded subsets of the real line. 4. Deal with the countability and separation axioms 5. Know the theorems with the conditions under which a topological space can be embedded in a metric space.
	PCMAJ20 - NUMERICAL ANALYSIS	1. Find the solution in Numerical, Algebraic and transcendental equations. 2. Solve the set of algebraic equations by direct and iterative methods. 3. Analyze the values of a function for any intermediate value of the independent variable. 4. Compute the numerical solution of various types of ordinary differential equations. 5. Acquire the numerical solution of Partial Differential Equations.
	PCMAK20 - PROBABILITY THEORY	1. Characterize probability models and function of random variables based on single and multiple random variables. 2. Evaluate and apply expected value, moments and understand the concept of Chebyshev inequality. 3. Analyze the concepts of characteristic functions and its properties. 4. Apply probability distribution to solve the real world problems. 5. Understand the concept of limit theorem and its applications.
	PCMAL20 - OPERATIONS RESEARCH	1. Determine the feasible solution using Revised simplex method, Duality and bounded variable algorithm. 2. Understand of the theoretical background of queuing systems and solve the real world problems. 3. AnalyzetheInventory models and solve EOQ models. 4. Apply dynamic programming to solve real world problems. 5. Solve constrained and unconstrained optimization problems using Hookes and Jeeves algorithm, Gradient projection, Lagrange multipliers, Kuhn-Tucker conditions etc.
	PEMAE20 – ELECTIVE III A:PROGRAMMING WITH JAVA	1. Understand the benefits and applications of OOP and distinguish C++ and JAVA. 2. Gain knowledge about operators and its types. 3. Define decision making statements and solve problems based on it. 4. Develop the program by manipulating classes and methods in the Java programming language.

		5. Explore the Java programming by using arrays.
	PEMAG20– ELECTIVE III B: PROGRAMMING WITH R	1. Familiarize with basics of R software and built in function of R. 2. Identify the characteristics of datasets and plot the datasets in R using graphical methods. 3. Demonstrate understanding and use of for loop, if statement and break. 4. Implement the learning techniques and computing environment that are suitable for the applications under consideration. 5. Compute vectors and matrices, matrix inverse, eigen values and eigen vectors.
	PEMAF20 – ELECTIVE PRACTICAL: JAVA	1. Implement programs with classes. 2. Write programs that perform operations using arrays. 3. Develop the program by decision making statements and solve problems based on it. 4. Illustrate basic programming concepts such as program flow and syntax of a high-level general purpose language. 5. Take a problem, figure out the algorithm to solve it and write the code.
	PEMAH20 - ELECTIVE PRACTICAL: R	1. Familiarize with basics of R software and built in function of R. 2. Identify the characteristics of datasets and plot the datasets in R using graphical methods. 3. Demonstrate understanding and use data frames. 4. Implement the learning techniques and computing environment that are suitable for the applications under consideration. 5. Compute vectors and matrices, matrix inverse, eigen values and eigen vectors.
	PIMAE20 - INDEPENDENT ELECTIVE 3 A: SKILL ENHANCEMENT IN REAL AND COMPLEX ANALYSIS -I	1. Utilize the basics of set theory and number system. 2. Acquire the knowledge of Sequences and Series. 3. Compute the Limit, Continuity and Differentiation of functions. 4. Analyze the Transcendental functions such as Exponential, Trigonometric and Hyperbolic Functions. 5. Evaluate the integral by Cauchy's Integral formula.
	PIMAF20 - INDEPENDENT ELECTIVE 3 B: FUNDAMENTALS OF RESEARCH METHODOLOGY AND STATISTICS - I	1. Utilize the basic concepts of Research. 2. Prepare the review of literature. 3. Plan the various types of survey studies and sampling design. 4. Study the case of Historical methods and Philosophical methods. 5. Classify the experimental procedure and case study of various groups.
	PCMAM20 -FUNCTIONAL	1. Gain the knowledge of complete normed linear space and the Hahn Banach

	ANALYSIS	theorem. 2. Understand the open mapping theorem, closed graph theorem, uniform boundedness theorem and determine the concept of complete inner product space and its properties. 3. Classify the operators into adjoint, self adjoint, unitary and normal operators. 4. Know the basic properties of Banach Algebra and the spectrum of an element in a Banach algebra. 5. Represent commutative Banach algebras as algebras of continuous functions.
	PCMAN20 – CALCULUS OF VARIATIONS	1. Understand the functional and its applications. Also use the Euler-Lagrange equation to find the differential equations for stationary paths. 2. Describe Du Bois-Reymond problem and solve it. 3. Solve differential equations for stationary paths subject to boundary conditions 4. Give an account of the foundations of calculus of variations and its applications in Mathematics and Physics. 5. Apply direct methods to solve variational problems.
	PCMAO20 - MATHEMATICAL STATISTICS	1. Understand the sample moments and their functions and analyze chi-square, Student-t, Fishers-Z distributions. 2. Demonstrate the knowledge of the properties of parametric testing procedures. 3. Construct tests and estimators, and derive their properties. Estimate population parameters from data sets and use the sampling distributions to compute confidence intervals for these population parameters. 4. Learn the basic components of hypothesis testing and perform hypothesis test on population means. 5. Understand the basic terms used in design of experiments and use appropriate experimental designs to analyze the experimental data.
	PCMAP20 - PROJECT	
	PEMAI20 - ELECTIVE IV A: GRAPH THEORY	1. Understand the concepts of basic graph theory. 2. Identify subgraphs, cycles, paths and connection in graphs. 3. Analyse the cut vertices, cut edges and bonds in trees 4. Distinguish between the Hamiltonian andEulerian graph. 5. Explain the concepts of matchings and coverings in bipartite graphs
	PEMAJ20 –ELECTIVE IV B:FUZZY SET THEORY	1. Distinguish between crisp set and fuzzy set through bi-valued logic and infinite-valued logic. 2. Know about the most widely used standard fuzzy set operations. 3. Formulate the fuzzy number which is a special case of a convex, normalized

		fuzzy set of the real line. 4. Explore the fuzzy relation and its operations which is the generalization of crisp relation. 5. Analyze the methods of decision making in fuzzy environment and their applications in LPP.
	PIMAG20 - INDEPENDENT ELECTIVE 4 A: SKILL ENHANCEMENT IN REAL AND COMPLEX ANALYSIS – II	1. Analyze the theory of Partial derivatives. 2. Compute Riemann Sum and Riemann integral. 3. Evaluate the concepts of Lebsegue measure and Lebsegue integral. 4. Identify the Connectedness and Compactness. 5. Calculate the Residues of functions and improve the knowledge of conformal mappings.
	PIMAH20 - INDEPENDENT ELECTIVE 4 B: FUNDAMENTALS OF RESEARCH METHODOLOGY AND STATISTICS – II	1. Analyze the needs and purpose of Experimental design. 2. Prepare and Analyze the Questionnaire and compute the Statistical analysis of data. 3. Analyze the statistical data and research report. 4. Acquire the knowledge of Action research and Educational research. 5. Understand the basic measures of variability, dispersion and correlation.
B. Sc. CHEMISTRY	UCCHA20 - GENERAL CHEMISTRY – I	1. Recall the basic principles involved in redox reactions. 2. Classify the elements in the periodic table and explain the periodicity of properties. 3. Recall the concepts and theories of acid - bases and buffer solutions. 4. Explain the principle of inorganic qualitative analysis and apply it in practicals 5.Apply IUPAC nomenclature in naming organic compounds and the concept of hybridization to identify the geometry and shape of the simple organic molecules. 6. Define gas laws and different types of gases and velocities. 7. Explain the virial equation of state, Joule Thomson effect and inversion temperature. 8. Report the methods of determination of surface tension and viscosity. 9. Recall the concepts of classical and quantum mechanics and solve related problems.
	UCCHB20 - GENERAL CHEMISTRY – II	1. Illustrate the different types of bonds with examples and apply the knowledge of VSEPR theory to determine geometries of molecules. 2. Explain molecular orbital theory of homo and hetero nuclear diatomic

		molecules. 3. Discuss and compare the chemical and physical properties of alkali metals and their compounds. 4. Describe the chemistry of lithium 5. Explain and apply the electronic displacement effects. 6. Explain the reactions, generation, structure and stability of reaction intermediates. 7. Explain the reactions and mechanisms of alkanes, alkenes, dienes and alkynes. 8. Summarize the basic concepts of mesomorphic and colloidal states and solutions.
	UCCHC20- PRACTICAL I: INORGANIC QUALITATIVE ANALYSIS	1. Apply the concepts of semimicro analysis in inorganic qualitative analysis. 2. Develop skill to analyse systematically the given inorganic mixture and identify the acid and basic radicals. 3. Eliminate the interfering acid radical for group separation and identification of basic radicals.
	UCCHD20 - GENERAL CHEMISTRY – III	1. Define and calculate equivalent weights and concentration terms and explain the principles of volumetric analysis. 2. Illustrate the theories of different types of titrations and indicators. 3. Discuss the trend in periodicity of Beryllium, Boron and Carbon family elements and their compounds. 4. Describe the methods of preparation and specific properties of cycloalkanes. 5. Elaborate and apply the concept of acidity and acid strength of carboxylic acids. 6. Describe the methods of preparation and properties of alcohols, ethers and epoxides. 7. Illustrate the preparation and properties of dicarboxylic acids. 8. Explain the chemistry of carbonyl compounds. 9. Elaborate the basic concepts of solid-state chemistry including solid state defects and semiconductors.
	USCHA320 - SKILL BASED ELECTIVE: INDUSTRIAL CHEMISTRY	1.Discuss the composition, characteristics and manufacture of various industrial products. (Polymer, Leather, Textile, Glass, Ceramics, Cements, Paints and Pigments) 2. Understand the classifications of fuels and learn the common terms related to it. 3. Understand how to implement the concepts in industrial working environment
	UCCHE20 - GENERAL CHEMISTRY – IV	1. Explain the periodic properties of Nitrogen, Oxygen and Halogen family elements and their compounds.

		2. Reason out the position of noble gases in the periodic table and describe the preparation and properties of Xenon fluorides(XeF2, XeF4 and XeF6). 3. Illustrate the mechanisms of aliphatic, aromatic nucleophilic substitution and elimination reactions. 4. Recall and apply Huckel's rule. 5. Illustrate the preparation, properties and uses of heterocyclic compounds, dihydric and trihydric phenols and related named reactions. 6. Define the terms involved in thermodynamics. 7. Describe the laws of thermodynamics and their developments. 8. Derive the relationships between thermodynamic parameters. 9. Compute thermodynamic quantities using thermodynamic relations and equations.
	UCCHF20 – PRACTICAL II:VOLUMETRIC ESTIMATION	1. Use double titration method in volumetric analysis. 2. Prepare standard solutions 3. Apply volumetric principles to carry out acid-base titrations, complexometric titrations, precipitation titration and redox titrations like permanganometric, dichrometry and iodometric titrations.
	USCHB420 - SKILL BASED ELECTIVE: AGRICULTURAL CHEMISTRY	1. Understand the scope of agriculture in India and Tamilnadu. 2. Explain the physical and chemical properties of soil. 3. Describe the types of farming. 4. Summarize the certification of organic products. 5. Identify the benefits and adverse effects of pesticides. 6. Recall the classification, composition and ill effects of fertilizers.
	UCCHG20 - INORGANIC CHEMISTRY	1. Discuss the general characteristics of d and f block elements. 2. Compare the properties of elements belonging to Ti, V, Cr, Mn and Fe groups. 3. Summarize the various steps involved in metallurgical processes. 4. Illustrate the preparation, properties and uses of Ti, Zr, U, Pt and Th. 5. Recall the basic concepts of nuclear chemistry. 6. Classify nuclides and nuclear reactions. 7. Explain the stability of nuclides by n/p ratio, mass defect and binding energy, packing fraction and magic numbers. 8. Outline natural radioactivity and artificial radioactivity. 9. Differentiate nuclear fission and fusion reactions and explain their applications. 10. Describe the biological importance of certain elements, chelate therapy, radio pharmaceuticals, contrast agents and toxicity of few metals.

	UCCHH20- ORGANIC CHEMISTRY	1. Remember the concepts of stereoisomerism and apply it in identifying the configurations of the optical and geometrical isomers. 2. Illustrate tautomerism and conformational analysis. 3.Explain the preparation and synthetic uses of active methylene compounds 4. Discuss the basic concepts of organic photochemistry and organic photochemical reactions. 5. Apply the knowledge of various named reactions in organic synthesis. 6. Summarize the different types of molecular rearrangements their mechanisms and applications.
	UCCHI20– PHYSICAL CHEMISTRY	1. Demonstrate the plausible mechanisms based on the study of thekinetics of chemical reactions. 2. Describe the theories developed to understand the reaction kinetics of simple and complexreactions. 3. Explain the basic principles of photochemistry, deduce rate laws of photochemical reactions and discuss the applications of photo physical processes. 4. Apply Phase rule to study one component and two component systems and interpret phase diagrams. 5. Apply the knowledge gained about catalysis and adsorption to deduce the kinetics of homogeneous and heterogeneous surface reactions. 6. Solve numerical problems in chemical kinetics and photochemistry.
	UECHA20- ANALYTICAL CHEMISTRY	1. The Learners will be able to 2. Explain the principle, method and applications of gravimetric analysis. 3. Demonstrate the principles and techniques involved in paper, column, TLC and ion exchange chromatography and their applications. 4. Explain the laws, instrumentation and working of UV-Visible spectrophotometers. 5. Explain the principle, instrumentation of IR spectroscopy for the identification of simple organic molecules. 6. Explain the principles involved in NMR and interpret NMR spectra of simple organic compounds. 7. Explain the principle, instrumentation of Mass spectroscopy and determine the molecular formulae of simple organic molecules.
	UECHB20– BASICS OF COMPUTER PROGRAMMING IN C AND	1. Define and relate software and hardware 2. Describe the various components of C language 3. Apply C language for solving problems in chemistry

	ITS APPLICATIONS IN CHEMISTRY	
	USCHC520-SKILL BASED ELECTIVE: SMALL SCALE CHEMISTRY	1. The Learners will be able to 2. Understand the laws, role and steps involved in starting small scale industries. 3. Acquire skills to prepare soaps and detergents. 4. Describe the characteristics and uses of cosmetics and perfumes. 5. Gain skills in the manufacture of selected small-scale products.
	UCCHJ20 – COORDINATION CHEMISTRY	1. Define the terms involved in coordination chemistry and recall IUPAC nomenclature of coordination compounds. 2. Explain the concept of chelation and the role of chelates in various fields. 3. Illustrate the isomerism exhibited by coordination complexes. 4. Explain and compare the theories of bonding in coordination compounds and their experimental behavior. 5. Describe the geometry, magnetic properties and colour of transition metal complexes. 6. Explain the synthesis, properties and uses of metallic carbonyls. 7. Describe bonding, hybridization and structures of carbonyls of Ni, Cr, Fe, Co, Mn, Mo and W.
	UCCHK20 – ELECTRO CHEMISTRY	1. Apply the laws on electrolysis and definitions of specific, equivalent and molar conductance to the working of electrolytic cells. 2. Illustrate the Debye Huckel's theory of strong electrolytes. 3. Experiment the applications of conductivity measurement. 4. Explain the use of electrical energy in bringing about chemical reactions and how chemical reactions can produce electrical energy so has to design cells and batteries. 5. Apply chemical cells and concentration cells for determining the valency of mercurous ion, transport number, solubility and solubility product. 6. Demonstrate the knowledge gained in the study of irreversible electrode processes. 7. Illustrate the principle and applications of fuel cells.
	UECHC20 - CHEMISTRY OF NATURAL PRODUCTS	1. Explain the structural elucidation, properties and reactions of glucose, fructose, sucrose, maltose, starch and cellulose. 2. Discuss the preparation, properties and reactions of alpha aminoacids, synthesis of peptides and classification and structure of proteins.

		3. Describe the structure and applications DNA, RNA and processes like transcription and translation in protein synthesis. 4. Illustrate the sources, properties and structural elucidation of alkaloids and terpenoids. 5. Remember the sources, properties, structural elucidation and synthesis of flavonoids, carotenoids, anthocyanins and vitamins.
	UECHD20- POLYMER CHEMISTRY	1. Classify polymers. 2. Determine the molecular weights of polymers by physical and chemical methods. 3. Describe the mechanisms of different types of polymerization reactions. 4. Summarize the types and techniques involved in polymer degradation. 5. Demonstrate the applications of industrial polymers and explain the role of conducting polymers. 6. Illustrate the various polymer processing techniques.
	UECHE20- MAJOR ELECTIVE III A APPLIED CHEMISTRY	1. Describe the digestion and absorption of carbohydrates, proteins and fats. 2. Describe the role of enzymes and physiological functions of hormones. 3. Recall the definition, constituents and physico-chemical properties of milk. 4. Indicate the composition of creams, butter, ghee and ice creams. 5. Demonstrate the chief processes involved in leather manufacture and treatment of tannery effluents. 6. Classify and enumerate the properties of soils. 7. Determine the physico-chemical properties of water. 8. Illustrate reverse osmosis and ion-exchange methods.
	MAJOR ELECTIVE III B UECHF20- PHARMACEUTICAL CHEMISTRY	1. Recall the basic pharmacological terms. 2. Describe the pharmacology of diseases and their cure. 3. Illustrate the selected Indian Medicinal plants and their uses. 4. Explain the definition, properties and therapeutic uses of sulphonamides, antibiotics, antiseptics and disinfectants. 5. Explain the role of analgesics and anesthetics. 6. Describe the causes, symptoms and drugs used for the treatment of Cancer, AIDS, Epilepsy and Hypertension 7. Discuss the characteristics and classifications of cardiovascular drugs. 8. Identify the common organic pharmaceutical aids.
	USCHD620 - FOOD CHEMISTRY	1. The Learners will be able to 2. Apply simple analytical techniques for detecting food adulterants. 3. Describe the role of food additives, preservatives, flavours, colours and

		antioxidants. 4. Detect food poisons and apply first aid techniques. 5. Distinguish between alcoholic and nonalcoholic beverages. 6. Describe the importance of saturated and unsaturated fats in edible oils. 7. Recall the classification, composition and describe the nutritive values of fruits and vegetables.
	UCCHL20 -PRACTICAL III: PHYSICAL CHEMISTRY PRACTICAL	1. Demonstrate practical skills in carrying out chemical reactions of different orders to arrive at reaction kinetics. 2. Estimate quantitatively using conductometric and potentiometric titrations 3. Assess the meaning of values and calculations in experiments and learn the techniques of getting rate constants through graphical methods. 4. Understand laboratory practices and safety/First aid rules. 5. Handle electronic equipments with technical skills
	UCCHM20-PRACTICAL IV: GRAVIMETRIC ESTIMATION	1. The Learners will be able to 2. Quantitatively estimate metal ions using gravimetric analysis. 3. Gain knowledge on the choice of precipitating methods, reagents, crucibles and filtration. 4. Identify common errors in gravimetric analysis. 5. Outline the favourable conditions for precipitation and factors affecting the particle size of the precipitate. 6. Relate particle size of the precipitates with choice of crucibles used in gravimetric estimations.
	UCCHN20 – PRACTICAL V : MICRO SCALE ORGANIC ANALYSIS & PREPARATION	1. Apply the concepts of micro scale analysis in organic qualitative analysis. 2. Develop skill to analyse systematically the given organic mixture and identify the functional group and special elements. 3. Prepare simple organic compounds
	UGCHA520/620 - FOOD AND NUTRITION CHEMISTRY	1. Explain the sources, classification, functions, deficiency diseases and metabolism of carbohydrates, proteins and fats. 2. Outline the sources, functions and deficiency diseases of fat soluble and water soluble vitamins. 3. Describe the sources, functions, and deficiency diseases and RDA of essential and trace minerals. 4. Appreciate the nutritive values and evaluate the chemical changes and loss of nutrients during cooking and storage of fruits and vegetables.
	UGCHB519/619 -COSMETICS	1. Define; classify cosmetics, deodorants, antiperspirants, perfumes, aerosols.

	AND DYES	2. Identify the pros and cons of synthetic cosmetics 3. Describe the safety assessment methods used by FDA. 4. Prepare and use fruits and vegetables based herbal cosmetics. 5. Evaluate the significance of aromatherapy and apply it to human health and beauty. 6. Explain the properties of natural and synthetic dyes. 7. Understand the impact of dyes used in textile and leather industry to environmental pollution. 8. Analyse the importance of dyes in pharmaceutical and food industry.
	UACHA20–ALLIED CHEMISTRY I	1. Understand the concept of aromaticity in benzenoid and non-benzenoid compounds. 2. Explain the preparation, properties and uses of heterocyclic compounds. 3. Explain the terms involved in kinetics and methods for determination of order of reaction. 4. Understand the theories of reaction rate. 5. Classify polymers and explain its preparation and properties. 6. Understand the concepts and types of chromatographic techniques. 7. Describe the separation and purification techniques-crystallisation, extraction and distillation. 8. Understand the composition and uses of fuel gases, cement, glass, explosives and dyes.
	UACHB20–ALLIED CHEMISTRY II	1.Understand the nomenclature and theories of coordination compounds. 2.Understand the concepts of isomerism and tautomerism. 3.Explain the concepts of acid-base theories, buffer solutions, salt hydrolysis and separation techniques. 4.Understand the basic principles of photochemistry and kinetics of hydrogen-chlorine reaction. 5.Define the basic terms in medicinal chemistry. 6.Discuss the causes, symptoms and treatment of cancer, diabetes and AIDS.
	UACHC20–ALLIED CHEMISTRY II	1. Acquire skills in volumetric analysis. 2. Analyse the elements and functional groups of organic compounds.
M. Sc. CHEMISTRY	PCCHA20 - STEREOCHEMISTRY AND CONFORMATIONAL	1. Assign the configuration of stereoisomers including those with no stereogenic carbon centre. 2. Explain the optical and geometrical isomerism of disubstituted cycloalkanes and

	ANALYSIS	classify the stereospecific and stereoselective reactions. 3. Compare the relative stability and reactivity of conformational isomers of cyclohexane and related compounds. 4. Ascertain the knowledge on the mechanism and stereo chemical outcome of aliphatic nucleophilic substitution reactions. 5. Compare the mechanistic spectra of elimination reactions. 6. Employ the principles of Optical Rotatory Dispersion and Circular Dichroism for various applications.
	PCCHB20 - STRUCTURAL INORGANIC CHEMISTRY	1. Summarize the theories of acids and bases. 2. Explain the structure of simple and complex solids. 3. Discuss conductors, semiconductors and insulators based on band theory. 4. Describe superconductors, theories of superconductivity and applications of high temperature super conductors. 5. Assess the structure and bonding in different types of ionic solids, metals and alloys. 6. Discuss the structure and bonding in polyacids, inorganic polymers and hybrid polymers. 7. Discuss the structure and bonding in polyacids, inorganic polymers and hybrid polymers.
	PCCHC20 - KINETICS AND PHOTOCHEMISTRY	1. Describe Activated Complex Theory in terms of translational and vibrational partition functions and apply it to derive the kinetics of reactions in solutions. 2. Apply Hammett and Taft equations and kinetic isotope effects in studying the mechanism of chemical reactions. 3. Discuss the concepts and kinetics of homogeneous and heterogeneous catalysis. 4. Explain adsorption phenomena and adsorption isotherms of Langmuir and BET. 5. Evaluate the kinetics of complex reactions. 6. Outline the techniques and kinetics of fast reactions. 7. Analyse the principles involved in photo excitation of molecules. 8. Derive the kinetics of photochemical reactions. 9. Explain the concepts of radiation chemistry. 10. Apply the concepts and kinetics of photochemical reactions on solar energy conversion and radiolysis of water.

	PECHA20 - ELECTIVE IA: POLYMER CHEMISTRY	1. Classify polymers and illustrate the types of polymerization techniques. 2. Illustrate the characterization techniques such as XRD, TGA, DSC, SEM and TEM. 3. Discuss the polymer reactions and degradation. 4. Apply polymer processing techniques in industries 5. Determine molecular weight of polymers by selected methods such as GPC, osmometry, viscometry. ultracentrifugation and MALDI methods. 6. Describe the synthesis, properties and applications of polymers and biopolymers.
	PECHB20 - ELECTIVE IB: NANOCHEMISTRY	1. Discuss the concepts of nanochemistry 2. Classify the various types of nanosystems and theories of nanochemistry 3. Explain the different methods and synthesis of nanoparticles 4. Discuss the characterization of the nanomaterials 5. Explain the applications of nanochemistry in optics, electronics and sensors. 6. Outline the biomedical application of nanoparticles
	PICHA20 - IEP - DAIRY CHEMISTRY	1. Summarize the knowledge on dairy products, processing and their applications 2. Describe the nutritive value of milk and chemistry of dairy products in bone and muscle formation. 3. Apply skills in detecting adulterants in milk and milk products.
	PICHB20 - IEP - QUALITY CONTROL AND CHEMICAL ANALYSIS	1. Define quality control, quality assurance and describe the necessity of TQM. 2. Apply standards and specifications in quality control 3. Discuss the testing methods involved in quality control of food and textile industries. 4. Evaluate quality analysis of water, soil and air. 5. Demonstrate the basics of good laboratory practices and describe the importance of sampling, documenting and usage of computer aids in QC labs.
	PCCHD20 - ORGANIC REACTIONS AND MECHANISMS	1. Discuss the oxidation of organic compounds using selected oxidizing reagents 2. Discuss the reduction of organic compounds using selected reducing reagents. 3. Describe the mechanisms of various rearrangement reactions and their applications. 4. Explain the reaction mechanisms and applications of selected named reactions. 5. Illustrate the types of photo chemical reactions. 6. Classify pericyclic reactions. 7. Examine the correlation diagram for butadiene-cyclobutene system.
	PCCHE20 - ADVANCED COORDINATION	1. Interpret the stability constants of complexes and explain the stability and applications of various macrocyclic ligands.

	CHEMISTRY	2. Explain and analyze the importance of CFT and MOT in bonding and to compare them with one another. 3. Compute CFSE values and to apply them. 4. Describe the causes and consequences of Jahn Teller distortion. 5. Analyze the different types of absorption spectra and determine magnetic susceptibility of metal complexes by different methods. 6. Discuss electron transfer reactions through ISM and OSM and their importance in biological systems. 7. Explain the influences of entering, leaving, central metal ion, cis and trans effects on the reactivity of square planar complexes of Pt(II). 8. Ascertain the mechanism of aquation and anation reactions. 9. Value the importance of metal complexes in medicine, industry and agriculture.
	PCCHF20 - GROUP THEORY AND QUANTUM CHEMISTRY	1. Identify symmetry operations and assign point groups of molecules. 2. Construct the character tables for C_{2v} and C_{3v} point groups. 3. Apply the concepts of symmetry in molecular vibrations, chemical bonding and electronic transitions. 4. Identify the limitations of classical mechanics. 5. Apply quantum chemistry to solve Schrödinger wave equation for one, two- and three-dimensional boxes and for hydrogen atom and helium ion. 6. Discuss classical and quantum mechanical treatments of one-dimensional harmonic oscillator. 7. Calculate the rotational constant and bond length of diatomic molecules. 8. Discuss and apply the approximation methods to single and multi-electron systems. 9. Apply the MO theory to di and polyatomic molecules. 10. Explain the application of HMO theory to ethylene, butadiene and benzene.
	PECHC20 - ELECTIVE IIA: PHARMACEUTICAL CHEMISTRY	1. Classify the pharmaceutical drugs and explain the mechanism of drug action and absorption of drugs. 2. Illustrate the biological role of important inorganic compounds and the drugs used in the treatment of mental disorders. 3. Elaborate on drug design and development. 4. Identify the causes of cancer and its treatment. 5. Assess the mechanism and the mode of action of anticancer drugs. 6. Explain different types Nutraceuticals and their applications. 7. Discuss the role of anticoagulants in the treatment of blood disorder.

	PECHD20 - ELECTIVE II B: MEDICINAL CHEMISTRY	1. Explain the designing of drugs by different approaches. 2. Define the physiochemical properties of drug molecules. 3. Illustrate pharmacophore, toxicophore, metabophore and interchangeable bioisosteres. 4. Describe the nature of drug receptors and its binding interactions. 5. Explain the stereochemical properties and biological activity of drug molecules. 6. Identify the properties of drug molecules by quantum mechanics and molecular mechanics. 7. Describe the physiological and pathological approaches while designing newer drugs for newer diseases. 8. Discuss the biological activity of steroids and radioisotopes.
	PCCHG20 - PRACTICAL I: ORGANIC CHEMISTRY - I	1. Identify the components in two component mixture and detect the functional groups. 2. Prepare the organic compounds and purify them. 3. Perform common laboratory techniques like separation, refluxing, recrystallization, vacuum filtration and sublimation.
	PCCHH20 - PRACTICAL II: INORGANIC CHEMISTRY - I	1. Demonstrate group separation and analysis of inorganic mixtures. 2. Identify rare and common ions present in the inorganic mixtures 3. Prepare selected inorganic complexes. 4. Estimate the metal ions present in the sample by colorimetric method.
	PCCHI20 - PRACTICAL III: PHYSICAL CHEMISTRY - I	1. Prepare the solutions of different concentrations. 2. Experiment and calculate the rate constant of ester hydrolysis and primary salt effect. 3. Determine the order and energy of activation using kinetics. 4. Construct and analyze phase diagrams. 5. Examine the validity of Freundlich and Langmuir adsorption isotherms 6. Determine the rate constant using polarimeter and stability constant using photo colorimeter. 7. Develop skills in handling colorimeter and polarimeter.
	PICHC20 - IEP - CSIR-NET PREPARATORY COURSE IN INORGANIC CHEMISTRY	1. Apply the principles, concepts, theories, methods and techniques of inorganic chemistry to qualify UGC-CSIR and other competitive examinations.
	PICHD20 - IEP - WATER CHEMISTRY	1. Explain the physical and chemical properties of water. 2. Describe the instruments used for water quality monitoring.

		3. Examine the physical, chemical and biological pollutants in water. 4. Demonstrate the treatment methods used for recycling of waste water. 5. Explain the policies and laws related to water in Indian constitution.
	PCCHJ20 - SYNTHETIC ORGANIC CHEMISTRY	1. Outline the concepts of retrosynthesis, disconnection approach and protection of common functional groups and apply them in synthesizing target molecules. 2. Summarize the methods of asymmetric synthesis and resolution. 3. Describe the preparation and uses of selected organic reagents. 4. Discuss the role of PTC in organic synthesis. 5. Evaluate the role of transition metals in selected named reactions. 6. Illustrate chemoselectivity, regioselectivity and stereoselectivity.
	PCCHK20 - MOLECULAR SPECTROSCOPY	1. Apply Ultraviolet spectroscopy for the identification of organic compounds and inorganic complexes. 2. Interpret the IR spectra of organic compounds and inorganic complexes. 3. Discuss the different ionization techniques involved in Mass spectroscopy, principle of GC-MS and its advantages over MS. 4. Elucidate the molecular formulae and structures of unknown compounds using Mass spectroscopy. 5. Analyze the splitting pattern in the 1H, 13C, 19F and 31P NMR spectra for structural determination. 6. Discuss principle, instrumentation and applications of Mossbauer spectroscopy and analyze the Mossbauer spectra of iron and tin compounds. 7. Explain hyper fine splitting in EPR and interpret EPR spectra of simple radicals and complexes. 8. Explain the Photo Electron spectra for chemical analysis. 9. Elaborate on the concepts and theories of microwave, IR, rotation-vibration Raman, and electronic spectroscopy. 10. Determine the structure of compounds using spectral data.
	PCCHL20 - ELECTRO CHEMISTRY	1. Discuss the concepts of theories of strong electrolytes and verify the Debye Huckle Onsager equation. 2. Explain the principle and application of various analytical techniques. 3. Compare the structure of double layers. 4. Examine and predict the kinetics of electrode reaction of single step and multistep. 5. Discuss the theories and mechanism of corrosion and passivation. 6. Outline the types of fuel cells and ion selective electrodes.
	PECHE20 - ELECTIVE III A:	1. Compare different thermal methods of analysis and explain their applications in

	ANALYTICAL CHEMISTRY	material science. 2. Describe the principle, instrumentations of the Gas, HPLC and SCF chromatographic techniques and their applications. 3. Identify the metal ions using AAS and Photoacoustic spectroscopy. 4. Solve simple problems in chemistry using 'C' program. 5. Illustrate the importance of Green Chemistry and its impact on the sustainable environment. 6. Analyze the quality of water and treat waste water.
	PECHF20 - ELECTIVE III B: GREEN CHEMISTRY	1. Explain the goals and principles of green chemistry. 2. Summarize the green reactions. 3. Discuss the good laboratory practices and designing of green synthesis. 4. Explain selected green preparations. 5. Analyze the future trends in green chemistry.
	PICHE20 - IEP - CSIR-NET PREPARATORY COURSE IN ORGANIC CHEMISTRY	1. Apply the theories, concepts, processes and principles of organic chemistry to qualify UGC-CSIR and other competitive examinations.
	PICHF20 - IEP - FORENSIC CHEMISTRY	1. Explain the need, scope and functions of forensic science. 2. Discuss the mode of action and chemical properties of poisons. 3. Outline the qualitative and quantitative determination of forensic samples by analytical methods. 4. Demonstrate the process of lie detection and fingerprint detection.
	PICHG20 - IEP - RESEARCH METHODOLOGY	1. Define research, research objectives and draw the research plan. 2. Illustrate hypothesis testing. 3. Carry out literature search offline and online to fix the research problem. 4. Illustrate the importance of IF, SCI, h index and i index. 5. Apply statistical analysis in research methods. 6. Describe the general format of thesis writing. 7. Apply plagiarism checking software. 8. Illustrate the safety measures to be taken in handling toxic, inflammable and explosive chemicals and handle chemicals with care.
	PCCHM20 - NATURAL PRODUCTS AND BIOORGANIC CHEMISTRY	1. Discuss the synthesis and reactions of selected heterocyclic pigments, nucleic acids, vitamins and alkaloids. 2. Demonstrate the biosynthesis and metabolism of lipids, cholesterol and hormones. 3. Explain the metabolic pathway of amino acids and proteins and to analyze the structural aspects of proteins.

		4. Discuss the role and metabolism of nucleic acids, genetic code, transcription and translation. 5. Discuss the structure and biological role of enzymes (α-chymotrypsin) and cofactors.
	PCCHN20 - SOLID STATE CHEMISTRY AND NUCLEAR CHEMISTRY	1. Sketch the structures of perovskite, CdI, NiAs and spinels and explain electrical, magnetic and optical properties of solids. 2. Compare different methods of solid state reactions and demonstrate selected single crystal growth techniques. 3. Discuss the magnetic properties of nuclides. 4. Describe quark theory and salient features of nuclear models. 5. Illustrate the types of nuclear reactions. 6. Explain the applications of radioisotopes in neutron activation analysis, isotope dilution analysis and age determination. 7. Compare the different types of particle detectors, accelerators and explain the knowledge on Nuclear Waste Management.
	PCCHO20 - THERMODYNAMICS	1. Determine the partial molar properties, activity and activity coefficient of non-electrolytes, and standard free energies. 2. Illustrate the relationship between microscopic properties of individual atoms and molecules with macroscopic thermodynamic observables and derive the different types of distribution laws. 3. Derive thermodynamic functions in terms of partition functions. 4. Evaluate different forms of molecular partition function and explain law of equipartition of energies. 5. Derive heat capacity of solids by Einstein and Debye model. 6. Distinguish the nuclear spin states of hydrogen and deuterium. 7. Illustrate electron gas in metals and Blackbody radiation. 8. Apply spectroscopic data for statistical thermodynamics. 9. Explain the principles of non-equilibrium thermodynamics and its law. 10. Derive entropy production in chemical reaction and open systems.
	PECHG20 - ELECTIVE IV A: ORGANOMETALLIC AND BIOINORGANIC CHEMISTRY	1. Outline the preparation, properties, structure and bonding of organometallic complexes and apply 18 electron rule and EAN rule for metal carbonyls. 2. Discuss the mechanisms of organometallic reactions. 3. Explain rearrangement reactions of aluminium and tin compounds and their mechanisms. 4. Identify the role of transition metal catalysts in industrial processes.

		5. Evaluate the role of oxygen transport, ion transport and electrolytic balance in organisms. 6. Value nitrogen fixation. 7. Illustrate the biological role of metalloenzymes. 8. Summarize the metals used for diagnosis and treatment of cancer.
	PECHH20 - ELECTIVE IVB: ORGANIC FARMING AND SOLID WASTE MANAGEMENT	1. Elaborate the concept of organic farming. 2. Explain the vision and importance of organic farming movements. 3. Apply vermicomposting process and prepare bio-fertilizers. 4. Evaluate the technology to approach the benefits of organic farming. 5. Explain the concepts of solid waste management. 6. Outline the classification the solid wastes. 7. Apply the guidelines for waste hazards control. 8. Demonstrate the methods to reduce hazards.
	PCCHP20 - PRACTICAL IV: ORGANIC CHEMISTRY - II	1. Develop skills to perform two stage preparations of organic compounds and crystallize them. 2. Calculate the saponification value of oil. 3. Estimate the amount of the given organic compound. 4. Demonstrate simple chromatographic techniques. 5. Interpret the structure of organic compounds by analyzing spectral data.
	PCCHQ20 - PRACTICAL V: INORGANIC CHEMISTRY - II	1. Estimate the amount of metal ions in inorganic mixtures by volumetric and gravimetric methods. 2. Estimate the percentage of metals in ores and alloys by volumetric and gravimetric methods. 3. Prepare selected inorganic complexes. 4. Interpret the spectra of selected inorganic compounds.
	PCCHR20 - PRACTICAL VI: PHYSICAL CHEMISTRY - II	1. Apply laboratory skills to perform physico-chemical experiments. 2. Demonstrate acid-base, redox and precipitation titrations using conductometry and potentiometry. 3. Determine the pH of buffer solution potentiometrically and verify Ostwald dilution law and Onsager's equation. 4. Interpret the experimental results obtained by conductometric and potentiometric titrations. 5. Interpret UV-Visible spectra of simple molecules. 6. Describe spectral methods to calculate force constant and interpret NMR and IR spectra.

	PICHH20 - IEP - CSIR-NET PREPARATORY COURSE IN PHYSICAL CHEMISTRY	1. Apply the quantum chemistry to solve the Schrödinger wave equation for one, two- and three-dimensional boxes and for hydrogen and helium atoms. 2. Discuss and apply the approximation methods to single and multi-electron systems. 3. Discuss the concepts of atomic structure, spectroscopy and apply term symbols to many electron systems. 4. Apply the Huckel theory to conjugated systems. 5. Describe the concepts of statistical thermodynamics and apply the partition function to model systems. 6. Apply the concepts of symmetry in molecular vibrations, chemical bonding and electronic transitions. 7. Discuss the concepts of electrochemistry, chemical kinetics and enzyme kinetics. 8. Explain the kinetics of reactions in solutions, acid-base catalysis and surface reactions. 9. Discuss the theory and properties of colloids and mechanism of heterogeneous catalysis and structure of solids. 10. Discuss the kinetics of polymerization, and data analysis.
	PICHI20 - IEP - ADVANCED INSTRUMENTATION TECHNIQUES	1. Outline the working principle of advanced instrumentation techniques and their applications.
	PICHJ20 - IEP - LEATHER CHEMISTRY	1. Outline the tanning processes in leather industry. 2. Discuss the cleaner technology in leather industry. 3. Apply waste water management and zero discharge approaches in leather industry. 4. Develop skills for employment opportunity in leather industries.
B. Sc. ZOOLOGY	UCZOA20– INVERTEBRATA	1. Acquire knowledge about general classification, binomial nomenclature and Phylum Protozoa. 2. Understand classification upto class level, type study and salient features of Phylum Porifera and Coelenterata. 3. Compute the classification upto class level, type study and salient features of Phylum Platyhelminthes and Aschelminthes. 4. Understand classification upto class level, type study and salient features of Phylum Annelida and Arthropoda. 5. Acquire knowledge about the classification upto class level, type study and salient features of Phylum Mollusca and Echinodermata.
	UCZOB20– CHORDATA	1. Obtain knowledge about taxonomic status of vertebrates and its origin and

		Evolution. 2. Attain basic knowledge about anatomy and functions of systems in vertebrates. 3. Understand and comprehend adaptive radiations in vertebrates. 4. Obtain knowledge about salient features of chordates. 5. Understand the structural, functional and phylogenetic significance of chordates.
	UCZOC20–CORE PRACTICAL – I: INVERTEBRATA AND CHORDATA	1. Acquire knowledge about the digestive, circulatory and nervous system of arthropods and vertebrates. 2. Prepare mounting of the mouth parts of insects. 3. Understand the biological significance of invertebrates and vertebrates. 4. Obtain knowledge about structure and function of invertebrates and vertebrates. 5. Understand the importance of evolutionary significance of animals.Oesteology and dentition in mammals.
	UCZOD20 - CELL BIOLOGY AND BIOINSTRUMENTATION	1. Recall the cell theory, Distinguish between Prokaryotes and Eukaryotes. 2. Summarize the structure and functions of Cell Organelles. 3. Explain the structure and function of Nucleic acids. 4. Discuss the construction and applications of Microscopes, Centrifuges and Homogenizers. 5. Understand the types and applications of Chromatography and Electrophoresis.
	UCZOE20 – GENETICS AND EVOLUTION	1. Demonstrate the Mendelian inheritance. Understand the genetic interactions. 2. Acquire knowledge of Linkage, Crossing over, cytoplasmic inheritance and sex determination. 3. Analyze the types of Gene Mutation, Chromosomal aberrations, syndromes and inborn errors in metabolism. 4. Acquire the knowledge on Population Genetics 5. Recall the theories of Evolution, adaptations and human evolution.
	CORE PRACTICAL II UCZOF20 - CELL BIOLOGY , BIOINSTRUMENTATION AND GENETICS	1. Observe the structure of different types of tissue and the stages of cell division. 2. Demonstrate preparation of buccal smear and squash preparation of onion root tip. 3. Demonstrate the skill of focusing, calibrating a microscope and learn the principle, working of laboratory instruments. 4. Enumerate the Differential count of WBC, total count of WBC and RBC. Identify the blood group, simple Mendelian traits and syndromes. 5. Observe and study the life cycle of drosophila, polytene giant chromosome and

		the common mutants.
	UCZOG20 - DEVELOPMENTAL BIOLOGY	1. Understand gametogenesis and types of eggs and egg membranes. 2. Acquire knowledge on the mechanism and physiology of Fertilization, parthenogenesis and cleavage. 3. Compare cleavage, gastrulation and organogenesis in mammals. 4. Discuss human reproduction 5. Compare the different types of Assisted Reproductive Technologies.
	UCZOH20 – PHYSIOLOGY	1. Attain knowledge about the digestive system and interaction of complex metabolic pathway. 2. Understand the circulatory and respiratory system its structure, function and regulatory mechanism. 3. Obtains knowledge about the excretory and muscular system structure, function and regulation. 4. Understand the anatomy of nervous system, its function and physiology of vision and hearing. 5. Obtain knowledge on endocrine system, function and interaction of hormones.
	UCZOI20 – BIOSTATISTICS	1. Identify and collect different types of data and select samples for biological studies 2. Classify and tabulate the data and present them diagrammatically and graphically 3. Explain theoretical distribution. Compute mean, median and mode. 4. Explain and compute measures of dispersion. 5. Compute t-test; F-test; chi square test for biological studies.
	UCZOJ20– BIOTECHNOLOGY	1. Explain the scope and branches of Biotechnology and summarize Genetic Engineering. 2. Gain knowledge on cloning strategies. 3. Obtain knowledge about Gene transfer mechanism and Blotting Techniques. 4. Demonstrate Animal Cell Culture and explain the applications of cell culture. 5. Discuss the applications of Genetic Engineering in various fields.
	UCZOK20- ENVIRONMENTAL BIOLOGY	1. Obtain knowledge about ecology its branches and abiotic and biotic components of ecosystem. 2. Understand animal association, biogeochemical cycle and Ecosystem and its functions. 3. Discuss the structure and functions of terrestrial and aquatic ecosystems. 4. Understand the Characteristics of population, Community and Ecological

		Succession 5. Discuss the causes of pollution their control measures and wildlife management.
	MAJOR ELECTIVE IA UEZOA20- ECONOMIC ZOOLOGY	1. Demonstrate culture techniques of apiculture, sericulture, lac culture and vermiculture. 2. Illustrate the preparation and management of fish culture ponds. 3. Differentiate breeds of fowl and describe poultry and piggery management. 4. Understand Dairy farming and tanning process. 5. Acquire knowledge about processing of wool, fur and obtains insight of pharmaceutical products from animals.
	MAJOR ELECTIVE IB UEZOB20 –VERMICULTURE	1. Identify various groups of earthworms and impact of earthworm on soil. 2. Describe large and small scale composting methods. 3. Explain the factors affecting vermicomposting and preparation of vermibed. 4. Discuss the use of vermicompost and vermiwash in agriculture and horticulture. 5. Elaborate the role of earthworm in agriculture, fishing, medicine and pollution and promotion of vermiculture.
	ELECTIVE - II A UEZOC20– MICROBIOLOGY	1. Describe the anatomical structure and function of bacteria and virus. 2. Apply /explain the process of media preparation and bacterial culture. 3. Recognize and use the various sterilization techniques and Identify the chemotherapeutic agents. 4. Discuss the role of microbes in food production and preservation. 5. Gain knowledge on disease causing microorganisms.
	ELECTIVE - II B UEZOD20 – BIOINSTRUMENTATION	1. Gain knowledge on the principle and construction of the instruments. 2. Acquire understanding on the usage of the instruments. 3. Obtain knowledge on the working method of various techniques. 4. Gain understanding on the application of the techniques. 5. Apply the skill of instrumentation and micro techniques.
	ELECTIVE -III A UEZOE20– IMMUNOLOGY	1. Obtain knowledge about the primary and secondary lymphoid organs. 2. Attain basic knowledge about the types of Immunity and cell of immune response. 3. Understand the structure, types/classes of Antigen and Antibodies. 4. Obtain knowledge about antigen antibody reactions its importance in medical field. 5. Understand the importance of immunization and prevention of diseases.

	ELECTIVE - III B UEZOF20 – PARASITOLOGY	1. Acquire knowledge about parasites. 2. Understand host parasite interaction. 3. Discuss pathology of protozoan parasites. 4. Describe the pathology of Helminth parasites. 5. Understand Arthropod role as parasites and vectors.
	CORE PRACTICAL III UCZOL20 – PHYSIOLOGY, DEVELOPMENTAL BIOLOGY, AND ECONOMIC ZOOLOGY	1. Demonstrate experiments in Physiology. 2. Demonstrate expertise in handling instruments. 3. Identify developmental stages, placenta and histology in development biology. 4. Apply equipments used in rearing techniques. 5. Acquire knowledge on economic importance of animals.
	COREPRACTICAL IV UCZOM20 – ENVIRONMENTAL BIOLOGY, BIOTECHNOLOGY, MICROBIOLOGY AND IMMUNOLOGY	1. Perform practical procedures in Ecology and immunology. 2. Understands the adaptation of animals in the ecosystem. 3. Attains knowledge on the principle, working and application of instruments used biotechnology. 4. Obtain knowledge on microbes and the disease caused by them. 5. Attain basic knowledge on Lymphoid organs and immunoglobulins.
	SKILL-BASED COURSE -I USZOA120 - PUBLIC HEALTH AND HYGIENE	1. Understand about health, diseases and scope. 2. Acquire knowledge about nutrition and classification of food. 3. Analyze the interaction and impact of the environment on health. 4. Understand about communicable diseases and its prevention. 5. Improve the quality of life through prevention and treatment of non communicable disease.
	SKILL-BASED ELECTIVE USZOC320– SERICULTURE	1. Understanding about different variety of silkworms and their economic status 2. Gain knowledge about mulberry cultivation 3. Develop the skills for utilizing silkworm rearing appliances. 4. Demonstrate an indulgent of silkworm mounting, silkworm rearing, and silkworm reeling operations. 5. Identify diseases in silkworms and recognize their enemies to take necessary control measures.
	SKILL BASED ELECTIVE USZOD420-POULTRY KEEPING	1. Acquire Knowledge on different types of breeds of Fowls 2. Describe the essentials and maintenance of a good house 3. Compare the different types of rearing methods 4. Discuss the feeding requirements and its management 5. Explain the nutritive value and products of poultry.Identify Poultry diseases

		and vaccination Schedule.
	SKILL-BASED ELECTIVE USZOE520 -ORNAMENTAL FISH KEEPING	1. Obtain knowledge on the importance, design and maintenance of an aquarium. 2. Gain understanding on aquarium plants and usage of various accessories required for an aquarium. 3. Learns the feed requirement, formulation and various live bearing fishes. 4. Acquire knowledge about the Egg laying fishes, marine fishes and other organisms in an aquarium. 5. Attain understanding on loan availability and export potential.
	SKILL-BASED ELECTIVE USZOF620-ANIMAL BEHAVIOUR	1. Familiarize with various techniques to study the animal behaviour in lab and in Wild. 2. Acquire understanding on the mode of communication, locomotion foraging and Caching. 3. Comprehend the process of learning, memory, hormonal and neural systems. 4. Gain understanding on social organization and to differentiate behaviour. 5. Study the adverse effects and cure for abnormal behaviour among the Wild domestic and pet animals.
	NON MAJOR ELECTIVE UGZOA20-MATERNAL AND CHILD PSYCHOLOGY	1. Obtain knowledge about puberty, natal periods and maternal changes. 2. Acquire understanding on the growth, developmental stages and motor skills 3. Gains insights on the stages of cognitive development and personality. 4. Familiarize different emotions, emotional development and moral development. 5. Identify, classify and differentiate the gifted, mentally retarded and backward children.
M. Sc. ZOOLOGY	PCZOA20 - PHYLOGENY OF INVERTEBRATA AND CHORDATA	1. Obtain knowledge about taxonomic status of Invertebrates and its origin and Evolution 2. Attain basic knowledge about anatomy and origin of various systems of vertebrates. 3. Understand adaptive radiations in annelids, molluscs, pisces, amphibians and mammals. 4. Obtain knowledge about salient features of invertebrate and chordates. 5. Understand the structural, functional and phylogenetic significance of minor phyla.
	PCZOB20 - MOLECULAR BIOLOGY AND GENETICS	1. Able to identify DNA, RNA structure and understand their synthesis process. 2. Acquire in-depth knowledge about transcription and translation concepts. 3. Gain knowledge about transcriptional modification mechanism.

		4. Relate various genetic disorders and genetic variation in metabolism. 5. Study the genetic recombination and analyze genetic concepts
	PCZOC20-APPLIED BIOTECHNOLOGY AND MICROBIOLOGY	1. Gains knowledge to use microbes in production and value addition of food products. 2. Understand and apply the tools and techniques used in molecular biology. 3. Solve the problems related to biotechnology keeping in mind the safety factor for environment and society. 4. Learn the basic techniques used in genetic manipulation. Biosafety and ethical issues. 5. Acquire knowledge about transgenic animals and their use in research field.
	PEZOA20 - ELECTIVE IA: BIOSTATISTICS AND COMPUTATIONAL BIOLOGY	1. Explain statistical population and sampling. Describe probability. 2. Describe and perform standard deviation, hypothesis testing and test the significance of small and large sample. 3. Explain and compute correlation, regression and ANOVA. 4. Discuss about the databases and application of search tools. 5. Understand genomics, proteomics, drug designing and phylogenetic tree analysis.
	PEZOB20 - ELECTIVE - I B: COMPUTATIONAL METHODS FOR SEQUENCE ANALYSIS	1. Explain and classify the biological databases and its application. 2. Describe the sequence alignment, substitution matrices, and score matrices and search tools. 3. Analyze the evolutionary distance and boot strapping strategies. 4. Asses the genomic sequences, gene finding and analyses the regulatory regions. 5. Explain the secondary structure and gene identification.
	PCZOD20 - RESEARCH METHODOLOGY	1. Understand the principle and working mechanisms of various instruments. 2. Able to integrate theoretical knowledge of various biological instruments useful for research 3. Demonstrate critical thinking in designing research problem and find the solution to scientific research problem. 4. Gain research based acquaintance in designing the experiments and interpretation of data with research tools. 5. Acquire a broad knowledge to communicate scientific ideas in both written and oral formats.
	PCZOE20 - APPLIED ENTOMOLOGY	1. Identify the pest in different cash crops and the mode of infection. 2. Analyze the pest species of vegetables, fruits, stored grains and household

		pests. 3. Categorize the different insect pests and vectors of livestock. 4. Understand the classification of insecticides and the mode of action. 5. Apply appropriate method of insect pest management and integrated pest management.
	PCZOF20 - BIODIVERSITY AND WILDLIFE CONSERVATION	1. Acquire knowledge about the Biodiversity India and ecosystems. 2. Understand the values of Biodiversity. 3. Understand the Wildlife of India and threats to the wildlife. 4. Acquire knowledge about the Wildlife protection and conservation. 5. Explain conservation methods.
	PCZOG20 -PRACTICAL I INVERTEBRATA, CHORDATA, MOLECULAR BIOLOGY, GENETICS, BIOTECHNOLOGY AND MICROBIOLOGY	1. Demonstrate and dissect different systems of specimen. 2. Identify structural modification of chordates, adaptive feature based on mode of life and chromosomes. 3. Identify and explain various inborn errors of metabolism, describe karyotyping and identify functional gene in given sequence. 4. Gain practical insights on various instruments used in molecular biology. 5. Identify /explain various microorganisms, transgenic animals and GM plants
	PCZOH20 - PRACTICAL II - RESEARCH METHODOLOGY, APPLIED ENTOMOLOGY, BIODIVERSITY AND WILDLIFE CONSERVATION	1. Understand and apply basic concepts of instrumentation. 2. Gain skills in techniques of chromatography, electrophoresis and spectroscopy. 3. Demonstrate Histochemical staining techniques. 4. Imparts knowledge of insect pest and their control measures. 5. Understands biodiversity and explore the fauna existing around for documentation and motivates for further studies and research in the field.
	PEZOC20 -ELECTIVE II A: BIOCHEMISTRY	1. Acquire knowledge about atom and types of bonds and buffers. 2. Understand the properties of water body fluids its biological function and Classification of Amino acids. 3. Appraise the classification, properties and mode of action of Protein and Enzyme. 4. Understand the complexicity of the carbohydrate metabolism. 5. Acquire knowledge about the Vitamins and its importance.
	PEZOD20 - ELECTIVE II B: ENDOCRINOLOGY	1. Understand hormones its classification and function, the anatomy of endocrine glands, 2. Attain in-depth knowledge about Pituitary and Parathyroid Structure and Function. 3. Obtains comprehensive knowledge about structure and function of Pancreas

		and Adrenal glands. 4. Understand the complexicity of the endocrine system of invertebrates. 5. Obtain knowledge of hormones in development
	PCZOI20 - ENVIRONMENTAL BIOLOGY	1. Obtain knowledge about ecological succession and Environmental stresses and their management. 2. Attain knowledge about major classes of contaminants and their impact on environment. 3. Understand green energy and the types of recycling technologies for solid and liquid wastes and their role in environmental conservation. 4. Obtain knowledge about environmental indicators and their role in environmental balances and bioremediation. 5. Understand the importance of global ecology towards sustainable civilization
	PCZOJ20 -LIMNOLOGY AND TOXICOLOGY	1. Attains basic knowledge about fresh water habitats and its types. 2. Understand the Physio-Chemical Characteristics and its importance in freshwater ecosystems. 3. Obtain in-depth knowledge about the organisms and adaptation in the freshwater ecosystem. 4. Understands the basic knowledge about toxicology its principle, agents and estimation methods. 5. Attain knowledge on the impact of toxicant in the aquatic ecosystem.
	PCZOK20 - ANIMAL BEHAVIOUR	1. Understand the innate, acquired and group behaviours. 2. Acquire knowledge about habitat selection and foraging methods of animals. 3. Understand the interspecific behaviours. 4. Acquire knowledge about communication in animals. 5. Understand Social behaviour in animals.
	PEZOE20 -ELECTIVE III A: CLINICAL LABORATORY TECHNIQUES	1. Gain knowledge in laboratory practices and apparatus maintenance. 2. Understand about blood composition and basic hematology techniques. 3. Acquire knowledge of pathology of diseases caused by parasites, virus, bacteria & fungus. 4. Attain proficiency in experimental techniques and methods of urine analysis. 5. Acquire skills to analyze the results of physical, microscopic and biochemical analysis of body fluids.
	PEZOF20 -ELECTIVE III B: FISHERIES SCIENCE	1. Obtain knowledge on morphology and physiology of Indian fishes. 2. Attain knowledge on environmental and nutritional requirements of fishes. 3. Understand the types, distribution and scope of inland fisheries.

		4. Impart theoretical knowledge on surveying methods of fishery resources. 5. Acquire knowledge on various threats and conservation strategies of Indian fishes.
	PCZOM20 - PHYSIOLOGY AND ENDOCRINOLOGY	1. Attain in-depth knowledge about the enzymes, digestive system and interaction of complex metabolic pathway, respiration and the adaptation at extreme conditions. 2. Understand the circulatory and excretory system its structure, function and regulatory mechanism. 3. Obtains comprehensive knowledge about the muscular and nervous system structure, function and regulation. 4. Understand hormones its classification and function, the anatomy of endocrine glands. 5. Obtain knowledge on endocrine system its function and regulation in reproduction.
	PCZON20 - DEVELOPMENTAL BIOLOGY AND IMMUNOLOGY	1. Obtain knowledge about chemo differentiation in the egg during development 2. Attain knowledge about organizer and cellular differentiation, genetic defects, aging regeneration and teratogenesis 3. Understand the various forms of asexual reproduction, artificial fertilization and stem cells. 4. Obtain knowledge about cells of Immune system and immune response. 5. Understand the importance of immune therapy in treatment of diseases
	PCZOO20 –EVOLUTION	1. Understand the evidences of evolution, and importance of paleontology. 2. Compare the evolutionary theories, trends and mechanism of evolution. 3. Acquire knowledgeonadaptations for successful continuation of life and extinction. 4. Appraise the distribution of animals and geological timescale. 5. Reconstruct the Human origin andevolution.
	PCZOO20 - PRACTICAL III - ENVIRONMENTAL BIOLOGY, LIMNOLOGY, TOXICOLOGY AND ANIMAL BEHAVIOUR	1. Estimate the various ecological parameters in the water samples. 2. Describe the adaptive features of animals with reference to their habitat and ethology. 3. Prepare slides of planktons. 4. Perform Toxicology studies. 5. Gain practical knowledge on water treatment through water treatment plant visits.
	PCZOQ20 -PRACTICAL IV	1. Estimate/ analyze physiological parameters.

	PHYSIOLOGY, ENDOCRINOLOGY, DEVELOPMENTAL BIOLOGY, IMMUNOLOGY AND EVOLUTION	2. Acquire knowledge about of Endocrine glands and Endocrine disorders. 3. Understand the immunological importance of WBC and principle on antigen antibody reaction in ABO grouping. 4. Gain knowledge to identify developmental stages, placenta, and histology in development biology. 5. Compare the evolutionary significance, mimicry and adaptation in animals.
	PEZOG20 - ELECTIVE IV A: FISHERY BIOLOGY	1. Understand and apply the parameters for the growth of fish, biology of fish and gears in fishery. 2. Acquire knowledge of biology and techniques of shell fisheries. 3. Apply knowledge in establishing and managing sea weed and pearl culture and byproducts of fishery. 4. Obtain holistic knowledge on types of fish cultures pathogens and their control measures. 5. Understand about the processing, transportation and marketing of Fishes
	PEZOH20 - ELECTIVE IV B: AQUACULTURE AND FARM MANAGEMENT	1. Understand parameters of aquatic environment for aquaculture and farm management. 2. Apply biological criteria and economic significance of cultivable species. 3. Impart knowledge on seed production and hatchery management of commercially important cultivable fishes. 4. Obtain holistic knowledge on different types of fish cultures techniques. 5. Understand water quality parameters and biotechnological tools in disease diagnosis of culture fishes.
	PIZOA20 - INDEPENDENT ELECTIVE I A- PET KEEPING	1. Attain an insight on the present status of maintaining pets and its needs. 2. Acquire the knowledge on varied dog breeds and train them. 3. Attain the skill to manage the cat breeds and able to trace the diseased cat and treat them. 4. Able to get best choices of bird breed for business. 5. Able to choose commercially important fishes and understand the construction and requirement for setting aquarium to become an entrepreneur.
	PIZOB20 - INDEPENDENT ELECTIVE I B- BIOPHYSICS	1. Recall the basic concepts of Biophysics. 2. Describe and apply the law of thermodynamics of the biological system and concepts of energy 3. Acquire knowledge about membrane conductivity and transport. 4. Explain the principle techniques and application of lasers in biomedical field. 5. Understand working principle, instrumentation and applications of bio-

		analytical instruments.
	PIZOC20 - INDEPENDENT ELECTIVEII A-ANIMAL HUSBANDARY	1. Understand the management of livestock. 2. Able to differentiate special breeds of cattle. 3. Able to Familiarize with different methods of breeding. 4. Impart knowledge on the nutritive feeding practice of cattle. 5. Provide an intensive and in-depth knowledge management of cattle.
	PIZOD20 - INDEPENDENT ELECTIVEII B- ECO ENERGETICS AND ECOLOGICAL METHODS	1. Acquire knowledge about structure and functions of ecosystem. 2. Understand productivity and methods of measuring productivity. 3. Acquire knowledge about sampling and extraction techniques. 4. Understand the methods of wild life population studies. 5. Acquire knowledge about planktons, method of collection, preservation and morphological identification.
	PIZOE20 - INDEPENDENT ELECTIVEIII A- RADIATION BIOLOGY	1. Understand and apply the fundamentals of radiation biology. 2. Acquire knowledge on the effects of Radiation on DNA and its effects. 3. Understand and Analyze the radiation exposure and response. 4. Asses the role of radiation in carcinogenesis. 5. Explain radio therapy, protection and precaution in using radioisotopes.
	PIZOF20 - INDEPENDENT ELECTIVEIII B- DAIRYING.	1. Obtain knowledge about the development and management of dairying. 2. Attain knowledge about properties of milk and its composition. 3. Understand various periods of milking, variations in compositions and equipments used in milking. 4. Obtain knowledge about entry of bacteria into milk and types of bacteria. 5. Understand the various methods of pasteurization.
	PIZOG20 - INDEPENDENT ELECTIVE IVA- BIOSYSTEMATICS	1. Obtain knowledge about the concept, importance and attributes of biosystematics. 2. Acquire understanding on the biological characteristics. 3. Learn diversity and evolutionary relationship among the organisms. 4. Familiarize different taxonomic procedures, taxonomic keys and zoological nomenclature. 5. Apply phylogeny classification at species level and infra species level.
	PIZOD20 - INDEPENDENT ELECTIVE IV B- GENERAL PSYCHOLOGY	1. Gain the basic knowledge on Psychology and its branches. 2. Define concept of self and describe the theories of Personality. 3. Identify the need of social psychology. 4. Understand Psychopathology. 5. Apply the knowledge of psychology in different areas like forensic, family,

		court etc.
	PIZOI20 - INDEPENDENT ELECTIVE IVC- ANIMAL CARE	1. Gain knowledge on animal feeding. 2. Acquire knowledge on requirements for animal accommodation. 3. Recognize sick animals and diagnostic procedures to determine the disease. 4. Apply their knowledge in handling, restraining and transporting animals. 5. Attain an insight on animal psychology, innate behavior and survival.
B. Sc. PHYSICS	UCPHA20 – PROPERTIES OF MATTER AND ACOUSTICS	1. The properties of solids especially knowledge of elasticity help the students to identify the materials suitable for the construction of buildings, houses etc. 2. Learn the basics of properties of matter, how Young's modulus and rigidity modulus are defines and how they are evaluated for different shapes of practical relevance. 3. Properties of fluids especially knowledge of viscosity and surface tension help the students in their daily life and agriculture 4. Study the behaviour of the progressive wave 5. Learn the fundamentals of harmonic oscillator model, including free, damped and forced oscillators.
	UCPHB20 – THERMAL PHYSICS AND STATISTICAL MECHANICS	1. Become familiar with various thermodynamic process and work done in each of these processes. 2. Have a clear understanding about Reversible and irreversible process 3. Learn the working of a Carnot engine, and knowledge of calculating change in entropy for various process. 4. Realize the importance of Thermo dynamical functions and applications of Maxwell's relations. 5. Learn the relation between the entropy and probability.
	UCPHD20 – MATHEMATICAL METHODS AND CLASSICAL MECHANICS	1. Learn about gradients, divergence and curl in orthogonal curvilinear and their typical applications in physics 2. Learn about special type of matrices that are relevant in physics and get introduced to special functions like gamma function, beta function, delta function, dirac delta function, Bessel functions and their recurrence relations 3. Analyse statistical data using measures of central tendency, dispersion. Learn the methods of skewness like Karl-Pearson coefficient, Bowleys coefficient 4. Learn about the mechanics of moving particles and the constraints. The measure of position of moving particle and the parameters required to describe the state of system. Lagrange's equation deals with position, momentum and total energy of system in motion

		5. Learn about Hamiltonian functions and differences between Lagrangian and Hamiltonian. It deals with various physical applications
	UCPHE20 – OPTICS	1. To make the students understand different types of lenses and the aberrations in it 2. Learn about dispersion by thin prism and dispersion without deviation; deviation without dispersion of prism 3. Study about interference and various interferometers used for the applications like wavelength and resolution determination and refractive index of gases 4. Learn about the concept of diffraction. Its types Fresnel's and Fraunhofer diffraction experiments and applications 5. Study about polarization, its experiments Laurent's half shade polarimetry and applications
	UCPHG20 – ELECTRICITY AND MAGNETISM	1. Solve mathematical problems involving electric and magnetic forces, fields, and various electro-magnetic devices and electric circuits. 2. Develop explicit problem-solving strategies that emphasize qualitative analysis steps to describe and clarify the problem. 3. Gain confidence in their ability to apply mathematical methods to understand electromagnetic problems to real-life situations 4. Import knowledge of Transient current, Alternate current 5. To present a clear & consistent picture of the Ballistic galvanometer, Figure of merit, Capacitances, Emf of cells
	UCPHH20 – ATOMIC PHYSICS AND SPECTROSCOPY	1. Understand the observed dependence of atomic spectral lines on externally applied electric and magnetic fields. 2. Analyse the types of photo electric cells. 3. Realize the theories explaining the structure of atoms and the origin of the observed spectra. 4. Identify the atomic effect such as Zeeman Effect and its types 5. List the different types of atomic spectra
	UCPHH20 – BASIC ELECTRONICS	1. Learn the basic role of semiconductor and its working principle. 2. Identify and explain the various current components in a transistor. 3. Have a clear understanding about different types of oscillators and its working functions. 4. Realize the importance of special device and its applications. 5. Analysis the I-V characteristic of semiconductor diodes, transistors, FET, UJT and SCR.

	UEPHA20 – DIGITAL ELECTRONICS AND COMMUNICATION	1. Learn the fundamental operation of logic circuit. 2. Express the basic design and operation of arithmetic circuits. 3. Convert different type of codes and number systems which are used in digital communication system. 4. To introduce students to the basic idea of signal, modulation and demodulation techniques of analog communication. 5. To understand the concept, working principle, block diagram and key applications of AM and FM transmitting & receiving system.
	UEPHB20 – ELECTIVE – IB: ASTRO AND PLASMA PHYSICS	1. Learn the basic theories about the sun and solar system. 2. Learn the most fascinating and important astrophysical phenomena. 3. Have a clear understanding about visible matter in the universe 4. Study the various phases of the interstellar medium inside galaxies 5. Study in detail about Cosmic Rays, Galaxy and Instrumentation
	UCPHJ20 – NUCLEAR PHYSICS	1. Demonstrate a knowledge of fundamental aspects of the structure of the nucleus, radioactive decay, nuclear reactions and the interaction of radiation and matter. 2. Discuss nuclear and radiation physics connection with other physics disciplines – solid state, elementary particle physics, radiochemistry. 3. Describe experimental techniques used (or developed) for nuclear physics purposes semiconductor detectors and discuss their influence on development of new technologies. 4. Students learn about nuclear models, nuclear reactions, and radioactivity. Students might also examine nuclear imaging, dosimetry, and isotopic dating in a course focusing on nuclear science's applications. 5. Explore an application of nuclear and radiation physics and communicate their understanding to a group of their peers in a short presentation.
	UCPHK20 – RELATIVITY AND QUANTUM MECHANICS	1. Understand the concept of constant relative motion of different bodies in different frames of references 2. To introduce students to the concept of special relativity and its applications to Physical Sciences 3. To make the students understand the inadequacy of classical mechanics and the birth of quantum mechanics. 4. To study role of uncertainty in quantum physics. 5. To impart the knowledge about the postulates and the basic principles of quantum mechanics and operator formulation.

	UEPHC20 – Elective – II A: SOLID STATE PHYSICS AND MATERIAL SCIENCE	1. Building blocks of crystals, Bravais lattices, crystal structure, reciprocal lattice 2. To learn lattice dynamics, phonons, density of states, specific heat, thermal conductivity 3. To study electron theory, free model theory, band theory of metals, semiconductors and electrical conductivity 4. Learn the basic properties of superconductors in the frame of BCS theory 5. To study the dielectric property of various materials
	UEPHD20 – ELECTIVE – II B: MATERIALS SCIENCE	1. To learn about the materials properties and corrosion-oxidation of material 2. Study about the thermal properties of material and its effect 3. Learn about the testing of material quality 4. To study the synthesis of nanoparticles and characterization of nanoparticles 5. To make the students to understand the future application of nanomaterials
	UEPHE20 – Elective II A: MICROPROCESSOR 8085	1 Develop an ability to convert from binary into decimal and hexa decimal system 2 Provide a clear internal behavior of a basic logic gates 3 Explain the principles of registers and the block diagram of multiplexers 4 Provide a comprehensive understanding about the usage of ROM and RAM and make the students to differentiate the working process of ROM and RAM. 5 Enable the learners to get an in-depth knowledge in microprocessor and how to execute an instruction using processor.
	UEPHF20 – ELECTIVE III B: COMMUNICATION PHYSICS	1. Students understand the direct waves and ground waves 2. Students understand the working of television and RADAR 3. Analyse the types of Kepler's law 4. Students understand the principles of fiberoptics 5. Realize the LED,diodes, detectors
	UAPHA20 – ALLIED I: PHYSICS I	1. The learners will be able to 2. Gains the knowledge of the properties of materials and its applications. 3. Understands the properties of liquids. 4. Able to understand the concepts of heat, superconductors and its application 5. Perceives the clear knowledge of the characteristic behaviour of sound with its applications. 6. Understand the properties of light
	UAPHB20 – ALLIED II: PHYSICS II	1. Gain the knowledge about electricity and properties of magnetic materials. 2. Understand the importance of Wave mechanics. 3. Able to understand the concepts of nuclear reactions and the types of

		accelerators and detectors. 4. Perceive the fundamental knowledge about crystallography and the advancement in the field of communication 5. Learn about rectifiers, filters and opto-electronic devices with its applications
	UCPHC20 - PRACTICAL – I	
	UCPHF20 - PRACTICAL – II	
	UCPHM20 – PRACTICAL IV: APPLIED ELECTRONICS	
	UCPHL20- PRACTICAL III	
	UAPHC20: ALLIED PRACTICAL: PHYSICS	
	USPHAn20 – SKILL-BASED ELECTIVE: EVERYDAY PHYSICS	To make the students of other discipline to understand the day-to–day applications of Physics.
	USPHB320 – SKILL-BASED ELECTIVE: ELECTRICAL APPLIANCES	To make the students apply the concepts of Physics and its application in home appliances
	USPHC520 – SKILL-BASED ELECTIVE: PHYSICS FOR COMPETITIVE EXAMINATIONS	• To make the students familiar with problems in Physics. • To prepare the students for various Entrance examinations.
	USPHD19– SKILL-BASED ELECTIVE: MOBILE COMMUNICATION	• To make the students acquire knowledge about mobile phones. • To have the basic understanding of working of cell phones.
	UGPHA520 – NON-MAJOR ELECTIVE: FUNDAMENTALS OF PHYSICS	To explain the impact of Physics in day-to-day life.
M. Sc. PHYSICS	PCPHA20 – MATHEMATICAL PHYSICS – I	1. Understand and apply the basic concepts of vectors and vector space. 2. Perceive various types of matrices, solve Eigen value problems and carry out matrix operations. 3. Solve ordinary differential equations that are common in the physicalsciences. 4. Understand the characteristics of special functions to solve the physical problems.

		5. Understand and use Dirac-delta function for describing physical systems and apply Green's function to solve partial differential equations.
	PCPHB20 - CLASSICAL MECHANICS	1. Acquire knowledge about the fundamental concepts of dynamics of system of particles 2. Use D'Alembert's principle and calculus of variations to derive the Lagrange - Hamilton formalism applicable to solve the equation of motion for any mechanical system 3. Understand the essential features of canonical transformations and their applications to various systems. 4. Describe the Hamilton-Jacobi equation and develop the skills to use them to set and solve the appropriate physical problems. 5. Gain knowledge about the fundamental principles of small theory of oscillations and its applications.
	PCPHC20- STATISTICAL MECHANICS	1. Define and discuss the concepts in thermodynamics and statistical mechanics. 2. Differentiate classical and quantum statistics, explain the statistical behaviour of ideal system (Maxwell, Bose & Fermi) and calculate the statistical quantities. 3. Apply the Bose-Einstein and Fermi-Dirac distributions appropriately to understand the macroscopic properties. (Black body radiation, electrons in metals, paramagnetismetc.) 4. Formulate theories and microscopic models to explain the properties of complex system. (Ising model, Bose-Einstein condensation, liquid helium II) 5. Describe the role of fluctuations and transport phenomena in a system.
	PEPHA20 - ELECTIVE IA: ELECTRONIC DEVICES AND APPLICATIONS	1. Analyze about the fabrication of various Integrated circuits and semiconductor devices (construction, working, principles and V-I characteristics) and their applications. 2. Ability to understand about the basic principles and operations of opto electronic devices and their features and applications. 3. To study the Timer IC and its applications. 4. To know the principles, configuration, linear and non-linear applications of Op-amp used to design various digital circuits. 5. To understand the concepts of combinational circuits and sequential circuits and A/D –D/A converters used to design advanced digital system.
	PEPHB20 - ELECTIVE IB: ELECTRONIC	1. Compare the performance of AM, FM and PM schemes with reference to SNR.

	COMMUNICATION SYSTEMS	2. Design encoder and decoder schemes for error control. 3. Understand the orbital and functional principles of satellite communication systems. 4. Understand the evolution of cellular communication systems up to and beyond 3G. 5. Understand fundamentals of wireless communications.
	PIPHA20 –IEP: PHYSICS FOR SET / NET - PAPER-I	1. Describe and understand the motion of a mechanical system using Lagrange-Hamilton formalism. 2. Design and analyze of electronic circuits 3. Develop a digital logic and apply it to solve real life problems. 4. Ability to identify the properties of substances on property diagrams and obtain the data from property tables. 5. To acquire knowledge about classical and Quantum statistical mechanics.
	PIPHB20 –IEP: ASTRO PHYSICS	1. In-depth knowledge within the defined area of astrophysics. 2. Explain stellar evolution, including supernovas, neutron stars, pulsars, white dwarfs and black holes, using evidence and presently accepted theories. 3. Detail the presently accepted formation theories of the solar system based upon observational and physical constraints. 4. Detail the main features and formation theories of the various types of observed galaxies, in particular the Milky Way. 5. Develop observation skills to be able to explain astronomical features and observations obtained via telescopic observations.
	PCPHD20 - MATHEMATICAL PHYSICS – II	1. Apply concepts of complex analysis to evaluate definite integrals. 2. Explain various operations of tensors and apply in many branches of science. 3. Apply Laplace/Fourier transforms to solve mathematical problems and use Fourier transforms as an aid for analysing experimental data. 4. Use various probability distribution methods to analysis any experimental event. 5. Apply the concept of group theory in the domain of physical sciences.
	PCPHE20 - ELECTROMAGNETIC THEORY	1. Able to understand and apply the basic principles of electrostatics 2. Analyses the properties of magnetostatic field through current distribution with the application of various laws and conditions. 3. Able to perceive the propagation and interaction of electric and magnetic fields through free space and matter 4. Imbibes the wide-spread knowledge about radio communication with its

		mathematical applications. 5. Acquires the comprehensive knowledge of the various applications of antennas
	PCPHF20 - QUANTUM MECHANICS - I	1. Understand the concepts of Quantum Mechanics. 2. Ability to apply the concept of Quantum mechanics to various problems. 3. Understand various representations in Quantum Mechanics. 4. Attain knowledge about various approximation methods and their applications. 5. Acquire knowledge about Angular momentum and commutation rules.
	PEPHC20 - ELECTIVE II A: CRYSTAL GROWTH, NANO SCIENCE AND RESEARCH METHODOLOGY	1. Explain the fundamental concepts behind in the formation of crystal. 2. Demonstrate the various methods in crystal growth techniques and their advantages. 3. Understand the advanced methods of characterization instruments for crystal and nanomaterials. 4. To familiarize about the physical concepts and principles of nanoscience and nanotechnology. 5. Provide a broad view of various approaches for the synthesis and fabrication of nanostructures and their outstanding properties useful to carry out the research work. 6. To obtain the knowledge of doing summer project and carry out the future research work and to learn how to write the research paper, thesis etc.,
	PEPHD20 - ELECTIVE II B: ELECTRONIC INSTRUMENTATION	1. Describe the Principle and working of Transistor, Thyristor and other electronic equipments used to measure the physical parameters such as Temperature, pressure and force etc., , 2. Attain the knowledge of working principle of digital instruments (digital pH meter, digital storage oscilloscope, digital multimeter etc.,) 3. Demonstrate about the description of analytical Instruments (UV-VIS Spectrometer, IR Spectrometer, Flame Emission Spectrometer and ICP-AES Spectrometer) which was used to characterize the materials and analyze the results. 4. Impart the knowledge in working of Bio medical instruments and its applicable to find out any defects in our human body and to save our life. 5. Understand about the essential partsof the computer and their need anddevelop the skills to handle above all instruments useful for our carrier.
	PIPHC20 - IEP: PHYSICS FOR SET/NET - PAPER – II	1. Recall and apply the concepts and methods in mathematical physics and solve relevant problems in any competitive exams. 2. Recall and apply the concepts and methods in Electromagnetic theory and

		solve problems quantitatively in any competitive exams.
	PIPHD20 - IEP: MEDICAL PHYSICS AND INSTRUMENTATION TECHNIQUES	1. Explain the effect of pressure on human system. 2. Explain the physics of lungs and respiratory system. 3. Explain the physics of cardiovascular system. 4. Explain the application of electricity and magnetism in medicine. 5. Explain medical imaging techniques.
	PCPHG20 - PRACTICAL - I: GENERAL EXPERIMENTS	1. Measure electrical, magnetic and thermo-dynamical properties of solids. 2. Measure the thickness of glass plate (mechanical property) by using cornu's method 3. To find the wavelength of different colors through solar, mercury and hydrogen spectrum. 4. Calculate the acceptance angle and light gathering capability and attenuation properties of optical fiber 5. Viscosity, specific rotary power and polarizability of different liquids through various experiments. 6. Develop the skills to take an accurate reading and analyze the results of experiments and to solve problems while handling with analytical instruments.
	PCPHH20 - ELECTRONICS LAB	1. Identify the various digital ICs and understand their operation. 2. Develop a digital logic and apply it to solve real life problems. 3. Analyze, design and implement combinational logic circuits. 4. Analyze, design and implement sequential logic circuits. 5. Design the different oscillator circuits for various frequencies.
	PCPHI20- SPECTROSCOPY	1. Describe theoretical background (classic and quantum) of spectroscopic techniques such as microwave, IR and Raman, NMR, NQR, ESR and Mossbauer spectroscopy. 2. Apply solutions of the Schrodinger equations for simple systems (rigid rotor and harmonic oscillator) to real systems (rotational and vibrational) for use in determining the molecular energy levels. 3. Analyse rotational and vibrational (microwave, IR& Raman) spectra to determine the molecular structure and physical constants. 4. Interpret NMR, NQR, ESR and Mossbauer spectra to obtain the information about the chemical, structural and magnetic properties of the material. 5. Outline the methods, instrumentation and applications (any one application) for the following spectroscopic techniques: microwave, IR, Raman, NMR, NQR, ESR and Mossbauer spectroscopy.

	PCPHJ20 - QUANTUM MECHANICS - II	1. Understand the concept of scattering theory. 2. Achieve knowledge about Perturbation theory. 3. Attain Knowledge about relativistic Quantum Mechanics. 4. Assimilate the concepts of Dirac equation and its applications. 5. Gain knowledge about Quantization of fields.
	PCPHK20 - MICROPROCESSOR AND MICRO-CONTROLLER	1. Describe Hardware, different bus cycles and memory interface to 8085 Microprocessor. 2. Develop programs using 8085 Microprocessor Instruction set and addressing modes. 3. Describe and perform different types of peripheral interfaces to 8085 Microprocessor. 4. Explain hardware, instruction set and addressing modes of Microcontroller 8051 and develop programming for basic operations. 5. Describe and perform different types of external interfaces to 8051 Microcontroller.
	PEPHE20 - NUMERICAL METHODS AND C-PROGRAMMING	1. Understand and apply numerical concepts to solve equations and find missing values for any physical problems 2. Solve ordinary differential equations using numerical techniques 3. Understand the basic concepts of C Language 4. Understand and use various operators and arrays in C Language 5. Develop simple programs using C language along with computational tools
	PEPHF20 - ELECTIVE - III B: ADVANCED OPTICS	1. Understand the basic concepts of Laser theory 2. Understand and describe the different types of Laser 3. Explain the propagation of Laser beam 4. Describe the principle, types and loss of optical fiber 5. Understand the importance of nonlinear optics and apply the concepts of NLO to optical materials
	PIPHE20 - IEP: PHYSICS FOR SET/NET-PAPER III	1. Understand about Schrödinger equation, ladder operators and the concepts of time independent theory to solve Eigen value problems 2. Describe the properties of relativistic quantum mechanics and solve the problems using Fermi's Gold rule. 3. Understand the energy levels and structure of hydrogen atom and to solve the problems using ESR, NMR and Frank-Condon Principle. 4. Attain the basic concepts and theories in basic elements of atomic and molecular spectroscopy, classical/Quantum description of electronic,

		vibrational and rotational spectra and solve the problem related to that. 5. Gain the knowledge to solve the problems by using the theory of Raman, NMR and Spin resonance spectroscopy in order to face competitive exams and for perusing higher research work.
	PIPHF20 - IEP: NUMERICAL METHODS & RESEARCH METHODOLOGY	1. Understand and apply numerical concepts to solve equations and evaluate any integrals 2. Solve ordinary differential equations using numerical differentiation techniques 3. Understand the basics of research and research methodology 4. Define research problem in their own domain and describe various research design 5. Draw a good research report and impart research communication techniques
	PCPHL20 - MATERIALS SCIENCE AND LASER PHYSICS	1. To acquire knowledge about phase diagrams 2. To Impart knowledge about defects in crystals 3. Learn the basic principles of optical, Dielectric and Ferro Electric properties of materials 4. To acquire knowledge about polymer and ceramics 5. To understand the principle and working of Lasers
	PCPHM20- NUCLEAR AND PARTICLE PHYSICS	1. Apply core concepts in physics to understand nuclear interactions, features of nuclear reactions and characteristics of radioactive decays (beta & gamma). 2. Describe basic nuclear structure and nuclear properties by applying the mathematical theory and models (liquid drop model, Shell model, collective model, optical model etc.) 3. Evaluate some basic nuclear parameters such as radius, BE, Q-value, nuclear spin, parity etc. 4. Classify elementary particles (based on interactions and spin) and explain the fundamental concepts in particle physics (conservation laws, parity violation, interactions etc.) 5. Study the substructure and symmetries in elementary particles (SU (2) &SU (3)); apply Quark model to find the missing particle.
	PCPHN20 - CONDENSED MATTER PHYSICS	1. Able to correlate the X-ray diffraction pattern for a given crystal structure. 2. Formulate the theory of lattice vibrations and use that to determine thermal properties of solids. 3. Ability to understand theory of metals and semiconductors. 4. Able to differentiate between ferroelectric, anti-ferroelectric materials.

		5. Able to differentiate between type-I and type-II superconductors and their theories.
	PEPHG20 - ELECTIVE IV A: FIBER OPTICS AND NON-LINEAR OPTICS	1. Understand the basic principles and concepts in optical fiber and describe the properties of optical sources. 2. Distinguish between the various types and the characteristics of optical fiber. 3. Analyze and comparing the different fabrication process of fiber. 4. Describe various losses and connectors in optical fiber. 5. Understand non-linear effects in optical fiber and their applications.
	PEPHH20 - ELECTIVE IV B: ADVANCED MATERIAL SCIENCE	1. Understand the building unit of structure of crystal and their symmetry. 2. Interpret about the magnetic properties and effects on materials 3. Attain the knowledge of superconducting materials and problem solving. 4. Pick up the ideas in lasing action, optical resonators and its applications. 5. Get introduced all about smart, nano and magnetic materials and its application useful to carry out the research work and fabricating the devices for public utility.
	PIPHG20 - IEP: PHYSICS FOR SET/NET - PAPER IV	1. Understand the basic properties of nucleus and nuclear models. 2. Gain the knowledge about the elementary particles and quantum numbers. 3. Impart knowledge of finding solutions to any differential equations and Interpolation by using Newton's method, Simpson's and Trapezoidal rules. 4. Attain the basic concepts and theories in crystals and magnetism and develop the skills to solve the problems in the respective filed for performing higher studies and research. 5. Understand the basic concepts in superconductors.
	PIPHH20- IEP: ADVANCED NUCLEAR PHYSICS AND SPECTROSCOPY	1. Explain the basic concepts of nuclear detectors and particle accelerators. 2. Explain the basic aspects of astrophysics. 3. Explain the principles, working and application of nuclear spectroscopic techniques (RBS, NAA, PIXE) and other applications of nuclear physics. 4. Explain the basic principles, instrumentation and applications of UV spectroscopy. 5. Explain the basic principles, instrumentation and applications of atomic absorption and emission spectroscopy.
	PCPHO20- PRACTICAL III: ADVANCED GENERAL EXPERIMENTS	1. Interpret and appreciate the advanced concepts in physics. 2. Use scientific equipment for analysis and data acquisition. 3. Analyse the properties (electric, magnetic, nuclear and dielectric) of

		solids/liquids. 4. Apply acquired knowledge to the analysis of experimental data. 5. Get exposure to work environment at research level and motivation for a lifelong learning.
	PCPHP20 - PRACTICAL- IV MICROPROCESSOR, MICROCONTROLLER AND C PROGRAMMING	1. Develop assembly language programs on arithmetic and sorting operations using 8085 and 8051 2. Develop and perform peripheral interface programs with 8085 Microprocessor 3. Perform all code conversions and analog signals into digital and vice versa. Also can generate wave forms 4. Write C program for any basic operations 5. Solve any physical problems using C language along with numerical techniques
BOTANY	UBBTA20/UABTA20– OPTIONAL ALLIED BOTANY-I/ALLIED BOTANY-I	1. Outline the general characters, life cycle and economic importance of Algae and Fungi. 2. Distinguish the general characters of Bacteria and Virus 3. Understand the general characters and life cycle of Bryophyta, Pteridophyta and Gymnosperms. 4. Upgrade the knowledge in Cell biology and Genetics 5. Identify the pathogens and the applications of Plants in agriculture.
	UBBTB20 /UABTB20- OPTIONAL ALLIED BOTANY-II /ALLIED BOTANY-II	1. Classify Angiosperms and identify the family with the characters . 2. Identify and analyse the histology of Plants. 3. Gain knowledge on Embryology of Plants. 4. Understand the key process of Plant Physiology. 5. Integrate the knowledge of Horticulture in growing Plants.
	UBBTC20/ UABTC20- OPTIONAL ALLIED BOTANY PRACTICAL /ALLIED BOTANY PRACTICAL	1. Identify and describe the plants in technical terms belonging to the families prescribed in the theory syllabus. 2. Distinguish and analyse the microscopic and macroscopic study of Cryptogams. 3. Examine the internal features of Dicot and Monocot- root, stem and leaf. 4. Interpret the Physiology experiments. 5. Illustrate the horticultural practices- cutting, layering and grafting.
	SKILL BASED ELECTIVE USBTA120/ USBTA220– HERBAL THERAPY AND COSMETOLOGY	1. Acquire knowledge in the basics of medicinal plants. 2. Get an insight into the therapeutic values of Indian system of medicine. 3. Identify the herbs and formulate herbal medicines for skin care. 4. Identify the herbs and formulate herbal medicines for hair care.

		5. Evaluate the importance of herbs used in herbal cosmetics.
	SKILL BASED ELECTIVE USBTB121/ USBTB221– HORTICULTURE	1. Apply the principles of the cultivation of economically important horticultural crops. 2. Analyze the different methods of plant propagation in horticultural crops. 3. Evaluate the importance of floriculture in indoor gardening. 4. Plan and execute the different types of garden layouts and design. 5. Develop the skill for vegetable and fruit processing, its preservation and preparation of value added products.
	UGBTA520/ UGBTA620– EDIBLE MUSHROOM CULTIVATION	1. Plan the cultivation of mushroom for self employment activity 2. Identify the medicinal and nutritional value of mushroom 3. Evaluate the cultivation of Oyster mushroom 4. Develop the technical skills for both cultivation and preservation of mushroom 5. Establish a commercial mushroom production Unit.
EVS	UNEVS20– ENVIRONMENTAL STUDIES	1. Gain knowledge on multidisciplinary nature of environmental studies 2. Understand the Ecosystem, its structure and function 3. Understand the conservation of biodiversity 4. Gain knowledge on Environmental pollution, causes and its effects 5. Understand the risks due to chemicals in food
COMMERCE	UCC0A20 - PRINCIPLES OF ACCOUNTING- I	1. Gain knowledge about the basic accounting principles, concepts and conventions. 2. Write day books, prepare Ledger Accounts and verify the Trial Balance. 3. Prepare different types of subsidiary books and prepare relevant ledger accounts. 4. Analyze difference between cash book and bank pass book by preparing Bank Reconciliation Statement. 5. Identify the various errors and rectify them in the books of accounts. 6. Prepare Accounts of Non-Profit Organisation.
	UCCOC20 - PRINCIPLES OF ACCOUNTING-II	1. Prepare Accounts based on Single Entry System and understand the difference between single entry and double entry system. 2. Calculate average due dates and prepare account current through different methods. 3. Calculate depreciations of assets through different methods and ascertain the value of assets. 4. Understand the Meaning of Joint Venture and prepare related accounts in the books of related parties.

		5. Understand the meaning of Consignment of goods, prepare the necessary accounts and ascertain the Profit or loss. 6. Gain knowledge about different Bills of Exchange.
	USCOA120/USCOA220 - CONSUMER AWARENESS	1. Students gain an insight knowledge on consumer awareness movement and FSSAI 2006. 2. Students were familiarised with the rights of consumers. 3. Students gained thorough knowledge in handling grievances and its redressal measures. 4. Students were well versed in filing the complaints and appeals. 5. Students gained conceptual knowledge on the social responsibilities of the consumers.
	UCCOE20 - FINANCIAL ACCOUNTING I	1. Students acquired conceptual knowledge on Branch accounts and its systems. 2. Students were familiarised with the scope and dimensions of Departmental Accounting. 3. Students gain an insight knowledge on the preparation of Hire Purchase and Instalment Systems. 4. Students gained thorough knowledge in the accounting treatments to be applied in the preparation of Royalty Accounts. 5. Students were well versed in the methods of recording the Investment Accounts.
	UCCOF20 – PRINCIPLES OF COST ACCOUNTING	1. Understand the ideas of costing, retrieving the concept to prepare tenders & Quotations. 2. Executing the essence of material control, maintaining stock ledgers and various pricing methods. 3. Exemplifying the concept of calculating labour cost, wages and incentives. 4. Understand the concept of indirect expenses(Over heads) and its impact in production. 5. Applying the procedure to allocate and apportion various Overheads
	UCCOG20 - LAW OF CONTRACT I	1. Students acquired conceptual knowledge on essential elements of the contract. 2. Students were familiarised with the competence of parties to enter into a valid contract. 3. Students gained an insight knowledge on the legality of the contract. 4. Students gained thorough knowledge in the performance of a contract. 5. Students were well versed in the principal-agent relationship.
	UECOA20 - PRINCIPLES OF	1. Learn the concept and understand the principles and managerial skills.

	MANAGEMENT	2. Impart knowledge in planning, diagnosing and solving organizational problems and developing optimum managerial solutions. 3. Gain knowledge in organizing and delegating authority under various structures. 4. To identify and analyse attributes that motivate to work under different leadership styles. 5. To become versatile in co-ordinating and developing the skill of effective communication.
	UECOB20 - ESSENTIALS OF BUSINESS COMMUNICATION	1. Become versatile in business communication. 2. Acquire knowledge on drafting business letters. 3. Compose bank correspondence letters. 4. Understand the importance of report writing in organisations. 5. Apply skills in writing resume, job applications and to face interviews.
	USCOB320 – ADVERTISING & SALES PROMOTION MANAGEMENT	1. Students acquired conceptual knowledge on advertising. 2. Students were able to identify different advertising media. 3. Students gained an insight knowledge on the visualization of advertisement and procedure of copywriting. 4. Students gained thorough knowledge in measuring advertising effectiveness. 5. Students were well versed in managing sales through advertising.
	UCCOH20 - FINANCIAL ACCOUNTING II	1. Students gained knowledge in computing the loss of stock or loss of profits under fire insurance claims. 2. Students were able to prepare the Statement of Affairs and Deficiency accounts under Insolvency system. 3. Students gained knowledge on applying the various concepts relating to partnership accounts. 4. Students were familiarised to choose different modes of Dissolution of Partnership firms. 5. Students were able to differentiate the different methods of preparation under Pirecemeal Distribution System.
	UCCOI20 – METHODS OF COST ACCOUNTING	1. Acquire conceptual knowledge of process costing and its treatment. 2. Identify the methods of apportionment according to the impact of business. 3. Identify and analyze the costs incurred in contract costing and job costing. 4. Understand and apply the methods of calculating transport cost. 5. Differentiate and compare the cost and financial books to reconcile the accounts.

	UCCOJ20 - LAW OF CONTRACTS II	1. Students acquired conceptual knowledge on sales and consumer protection act. 2. Students were familiarised with the performance of valid contract. 3. Students gained an insight knowledge on special contracts. 4. Students gained thorough knowledge incorporation of companies. 5. Students were well versed in the internal affairs of the companies.
	UCCOK20 - MARKETING	1. Classify the various marketing activities and to summarize consumer behavior and decision making process. 2. Evaluate the strategies used by the marketers to sustain a product for longer period. 3. Familiarise the factors influencing pricing decisions. 4. Acquire knowledge on various promotional mix used by marketers to promote goods and services. 5. Understand the various methods of channels of distri bution and familiarize with latest Technologies.
	USCOC420 - Skill Based Elective - ENTREPRENEURIAL DEVELOPMENT	1. Students understand the basic concepts of entrepreneurship and its functioning. 2. Students were able to select the best financial institutions for business as per the needs. 3. Students generated best innovative business ideas. 4. Students bridged the gap between Government and entrepreneurs. 5. Students made an impact on the development of economy.
	UCCOL20 - CORPORATE ACCOUNTING I	1. Gain knowledge on the procedure of issue of shares and redemption of shares. 2. Understand the meaning and formalities of issues of debentures and underwriting of shares and debentures 3. Become proficient in preparing company final account as per the rules of Company Act 4. Know about the importance of Profit Prior to incorporation and their allocation. 5. Calculate Purchase consideration during the event of amalgamation, absorption and external reconstruction
	UCCOM20 - MANAGEMENT ACCOUNTING I	1. Understand the importance of management accounting and the installation of management accounting system 2. Analyze various financial statements and application of various ratio’s 3. Interpret inflow and outflow of funds in computation of fund flow statement 4. Report on cash flow analysis. 5. Prepare different budgets.

	UCCON20 - INCOME TAX LAW AND PRACTICE I	1. Students gained knowledge on the basic concepts of Income Tax. 2. Students became familiar with the provisions relating to Income from Salaries. 3. Students learnt to compute taxable Income from House Property. 4. Students became competent in computing Income from Business or Profession. 5. Students were familiarized with the powers and duties of different income tax authorities and their assessment procedure.
	UECOC520 & UECOC620– BANKING : LAW AND PRACTICE	1. Gain versatile knowledge on features, functions of banking. Operate various accounts as Per KYC norms. 2. Discern knowledge on the relationships between banker and customer. Analyze the concept of money laundering. 3. Gain in-depth knowledge on negotiable instruments and rights and duties of paying and Collecting banker 4. Impart knowledge on various types of loans & advances. Modes of charging securities. Analyze the mechanism of customer grievance. 5. Execute and apply the modern technologies for making payments and other technological services.
	UCCOO20 - CORPORATE ACCOUNTING II	1. Value Goodwill and shares of Company through different methods. 2. Prepare the statement of affairs and Liquidators final statement of Accounts 3. Get a comprehensive knowledge about the latest provisions of companies Act relating to consolidation of Holding and Subsidiary Company 4. Gain expertise knowledge in the preparation of final accounts of General Insurance Companies as per the revised AS of IRDA. 5. Prepare Profit & Loss and final Accounts of Banking Companies as per the Guidelines of RBI
	UCCOP20 - MANAGEMENT ACCOUNTING II	1. Understand Various Elements of Marginal Costing and Break Even Analysis. 2. Get Familiar with different Managerial Decision Making Techniques and its Practical Applicability 3. Apply norms of Variances Relating to Cost 4. Compute Capital Budgeting under different Methods 5. Know the importance of Responsibility Accounting and Zero Based Budgeting
	UCCOQ20 - INCOME TAX LAW AND PRACTICE II	1. Students learnt to determine the Income from Capital Gains. 2. Students acquired the skill in calculating the Income from Other Sources. 3. Students were well versed in ascertaining the provisions relating to Clubbing of

		Incomes and set off and carry forward of losses. 4. Students were able to assess the total income and tax liability of individual assessees. 5. Students gained practical knowledge on filing of returns of income.
	UECOD20/UECOE20 - ELECTIVE: ELECTRONIC COMMERCE	1. To know the various concepts of e-commerce. 2. Awareness gained on the aspects of e-commerce, the usage of internet technologies 3. Executing different security, OSI models 4. Imbibe knowledge on various payment models and its application 5. In depth knowledge on Tally hands on training to create a company and preparation of final accounts.
	USCOD520/USCOD620 - CONSUMER GUIDE AND EMPOWERMENT	1. Gain knowledge on Consumer Movement 2. Apprehend Knowledge on Right to Information act 3. Acquire Theoretical Knowledge Consumer Protection act 4. Know About FSSAI 2006 Act 5. Have In-Depth Knowledge on Certification Marks
	USCOE520/USCOE620 - PRACTICAL AUDITING	1. Students acquired conceptual knowledge on basic audit principles. 2. Students were familiarized with the preparation of audit programmes for various situations. 3. Students gained an insight knowledge on different audit evidence. 4. Students were well versed in methodology of internal audit. 5. Students were able to differentiate between vouching and verification.
	UAAFA20 – ACCOUNTING FUNDAMENTALS-1	1. Adopt the rules of Double entry system in sorting and preparing Accounts. 2. Understand the Accounting Cycle and prepare various accounts and to check Accounting errors. 3. Calculate and explain financial Accounts to reveal the profits/losses of an organization and also to evaluate the values of Assets and Liabilities. 4. Charge Depreciation on assets under straight line and written down value methods. 5. Differentiate Single entry & Double entry and ascertain the net worth of a business.
	UAAFB20– ACCOUNTING FUNDAMENTALS-II	1. Illustrate and build Knowledge of Partnership fundamentals and admission of a partner. 2. To solve problems relating to retirement and death of a partner. 3. Do the accounting related to various Branch offices under stock & Debtors and

		final accounts method. 4. Calculate and reveal the profits/ losses of a Department through Departmental Accounting Techniques. 5. Understand and adopt the rules of Hire purchase and installment system accounting.
	UGCOA520/UGCOA620 - BOOK KEEPING AND ACCOUNTING	1. Students acquired conceptual knowledge on accounting rules and its concepts. 2. Students were familiarised with the preparation of basic accounts. 3. Students gained an insight knowledge on preparation of various subsidiary books. 4. Students were well versed in analysing different types of errors 5. Students were able to prepare final accounts with different adjustments.
M.COM	PCCOA20 – ADVANCED CORPORATE ACCOUNTING	1. Prepare consolidated final accounts of holding and subsidiary companies. 2. Illustrate and compute the accounts of electricity companies. 3. Demonstrate about the accounts of life insurance companies. 4. Comprehend the generally accepted accounting principles and accounting standards. 5. Elucidate the procedures of liquidation of companies. 6. Understand and acquire knowledge on human resources accounting and inflation accounting.
	PCCOB20 – DIRECT TAXATION - I	1. Define and understand the residential status of assessees. 2. Calculate gross and net salary based on the provisions of the Act 3. Find out income from house property of the assessees 4. Compute the income from business or profession based on various related provisions 5. Calculate taxable and exempt capital gains 6. Find out the taxable income under the head Income from other sources
	PCCOC20 – ORGANISATIONAL BEHAVIOUR	1. Understand the concepts of organisationalbehaviour. 2. Analyse the factors influencing personality perception, values, attitudes and beliefs of human behaviour in organisation. 3. Understand and classify the techniques of group decisions. 4. Analyse the reasons for organizational change. 5. Discuss the reasons for organisational conflict and its consequences. 6. Understand the symptoms of stress and formulate measures to deal with stress.
	PCCOD20 – FINANCIAL	1. Understand the functions of financial markets and services

	SERVICES AND MARKETS	2. Attain empirical knowledge about venture capital 3. Gain knowledge about the functioning of credit rating agencies 4. Acquire knowledge on the concepts of mutual funds and its regulations 5. Procedural knowledge on the development and functions of financial market instruments 6. Understand the functioning of Government securities market.
	PECOA20 – ELECTIVE IA: COMPANY LAW	1. Familiarise the meaning of a company, its types and highlights of The Companies Act, 2013 2. Get insight of the formation procedure of a company 3. Understand the key managerial personnel of a company, their rights, duties and responsibilities 4. Gain knowledge about the type of company meetings, its procedure and secretarial duties with regard to meetings 5. Cognise the constitution of audit committee and its importance to a company 6. Comprehend the winding up procedure of a company
	PECOB20 – Elective IB: CUSTOMER RELATIONSHIP MANAGEMENT	1. Gain knowledge of customer relationship and its management 2. Apply the knowledge in the business process and other associated activities 3. Analyse the phases of relationship marketing 4. Apply the strategies in various relevant programmes 5. Become aware various models of CRM and use of technology in CRM
	PICOA20 – INDEPENDENT ELECTIVE IA: RISK MANAGEMENT	1. Gain knowledge of the basics of risks and risk management 2. Familiarise with the sources of risks in various fields like banking and currency exchange 3. Gather skills to manage risks at the corporate level 4. Acquire skills to manage risks using derivatives as tools 5. Understand the areas of risks and manage the same
	PCCOE20 – INDIRECT TAXATION: LAW AND PRACTICE	1. Understand the concept of indirect taxation 2. Get insight on the concept of Goods and Service Tax. 3. Cognise on supply and goods in Goods and Service Tax. 4. Illustrate problems by using various provisions of Goods and Service Tax. 5. Comprehend the various procedures for registration of Goods and Service Tax by business entities 6. Understand the concept of Customs Act and to elucidate and compute Customs duty with Goods and Service Tax
	PCCOF20 – DIRECT	1. Understand the concept of clubbing of incomes of assesses

	TAXATION - II	2. Gain knowledge of Carrying forward and set off of losses under different heads of income 3. Compute the total income of individuals after considering deductions, rebate and relief 4. Calculate the tax liability of individuals as per the rules of Income tax Act 5. Assess the taxable income of Firms and compute the tax liability of firm and partners 6. Assess the taxable income of Companies and compute the tax liability 7. Assess the taxability of Co-operative societies
	PCCOG20 – RESEARCH METHODOLOGY	1. To understand the concept of research methodology 2. To collect and compile data for the purpose of research 3. To get in depth knowledge on sampling and sampling methods 4. To analyse and present the data using statistical tools 5. To construct research report
	PCCOH20 – BANK FINANCIAL MANAGEMENT	1. To demonstrate on correspondent banking system and its functions 2. To be informed about letter of credit and various rules governing letter of credit. 3. To ascertain the knowledge on foreign exchange and its operations. 4. To manage and hedge risks involved in forex business. 5. To be aware on various components of banks balance sheet 6. To manage assets and liabilities of banks.
	PECOC20 – Elective II A: INTERNATIONAL MARKETING MANAGEMENT	1. To understand the concepts and approaches of international marketing. 2. To construct the knowledge on product awareness, pricing system and methods of physical distribution in international trade. 3. To acquaint skills to promote product internationally. 4. To identify various channels of distribution for oversees market. 5. To conduct oversees market research. 6. To determine various factors contributing to global trade and to manage such risks in international marketing
	PECOD20 – ELECTIVE II B: MANAGEMENT OF FINANCIAL DERIVATIVES	1. Gain knowledge of the basics of derivatives and instruments involved in the same 2. Acquire knowledge of the different types of contracts and its role in foreign exchange 3. Become acquainted with the various models related to derivatives and different markets 4. Apply the theories in real life situations and decide when an investment has to be

		made
	PICOB20: INDEPENDENT ELECTIVE II A: MANAGERIAL ECONOMICS	1. To analyse the demand situation in the market and the factors affecting demand for a product 2. To forecast the costs involved in a business and understand the theories of production 3. To assess the different types of markets prevalent in the economy and the pricing policies used 4. Compute national income of a country with knowledge about its components 5. Assess the validity of Foreign Direct Investments in the macro economic environment
	PCCOI20 – ADVANCED COST AND MANAGEMENT ACCOUNTING	1. To teach the students the advanced techniques in Cost and Management Accounting, enabling corporate reporting and decision making 2. Compute profits or losses of processes through equivalent production units 3. Analyse the profitability of contracts by preparing Contract Accounts 4. Take decisions and advise the management by applying Marginal Costing and Differential Costing techniques 5. Ascertain and assess variances in material, labour, overheads and sales using Variance Analysis 6. Prepare Funds flow statement and find out the increase or decrease in working capital 7. Ascertain the cash position and position of cash equivalents by preparing Cash flow statements based on AS-3
	PCCOJ20 – SERVICES MARKETING	1. To understand the concept of services marketing and services sectors in India 2. To analyse and forecast demand situations and patterns in service sectors 3. To develop skills on producing products to meet out the needs of target market 4. To segment market into different groups based on various factors 5. To determine service quality using various models 6. To get insight knowledge on consumer behaviour and need for customer relationship management
	PCCOK20 – ADVANCED BUSINESS STATISTICS	1. Determine and use partial and multiple correlation and regression. 2. Create awareness on non-parametric tests and their application in research real life situation. 3. Frame and test a hypothesis and ability to determine statistical significance

		between two variables. 4. Apply and compute chi-square and test a hypothesis on specific value of population variance. 5. Apply, compute and interpret f-distribution and ANOVA. 6. Determine and use partial and multiple correlation and regression
	PCCOL20 – HUMAN RESOURCE MANAGEMENT	1. Imbibe the knowledge on human resources management and its functions. 2. Design and analyse a job in organisation. 3. Evaluate a job in organisational structure. 4. Assimilate the knowledge on career development and to develop career path to employees of an organisation. 5. Identify and appraise performance of employees of an organisation. 6. To be aware of employee grievances and reprisal procedures.
	PCCOM20 – INTERNSHIP TRAINING PROGRAMME	1. Handle the accounts of any type of concern 2. File Income tax returns of individuals, firms and other type of organisations 3. File GST returns of individuals, firms and other type of organisations 4. Conversant with the procedures for claiming Insurance claims on various occasions 5. Manage the human resource of organisations
	PECOE20 – Elective III A: PRINCIPLES OF INSURANCE	1. To understand the basic principles of insurance. 2. To elaborate the principles of life, fire, marine, motor vehicle, health and miscellaneous insurances 3. To assess various policies and to illustrate settlement of claims 4. To file claims in case of happening of the event or on maturity of the policy 5. To comprehend the laws of insurance according to the IRDA Act.
	PECOF20 – Elective III B: PRINCIPLES OF EVENT MANAGEMENT	1. Become aware of the basics of Event Management and duties of an Event Manager 2. Hold events of various Government and Local authorities 3. Acquire knowledge about planning for conducting events 4. Familiarise with the importance of media for organising events 5. Prepare oneself as a Master of Ceremony
	PICOC20 – INDEPENDENT ELECTIVE III A: TOTAL	1. Understand the concept of Quality Control and the procedures for implementing quality

	QUALITY MANAGEMENT	2. Gain knowledge about customer satisfaction and customer relations management and the dimensions of service quality 3. Associate the importance of quality standards for human resource management 4. Frame quality standards for all aspects of the organisation 5. Practice the quality parameters as required by government regulations
	PCCON20 – FINANCIAL MANAGEMENT	1. Comprehend financial management and financial planning 2. Apply general management principles to financial resources of a business 3. Identify and use various financial instruments to increase the potential return of investments 4. Determine capital and working capital requirement of a business 5. Analyse the cost of capital through various theories 6. Develop decision making skills on optimizing investment and dividend decisions
	PCCOO20 – INDUSTRIAL RELATIONS AND LABOUR LAWS	1. Understand the significance of Industrial relations in organizations 2. Gain knowledge on the process and procedures to handle industrial disputes 3. Good base of labour laws and computation methods of compensation 4. Acquainted with the concept, principles and functions of trade union, collective bargaining and workers' participation in management 5. In-depth knowledge of laws relating to Payment of Wages Act and Factories Act and its judicial set up 6. Attain descriptive knowledge on legal aspects of ESI Act.
	PCCOP20 – ENTERPRISE RESOURCE PLANNING AND TALLY	1. Gain knowledge about the various Enterprise Resource Planning soft wares 2. Understand the technologies associated with ERP 3. Decide about a software suitable for the type of business of their choice 4. Understand the theoretical aspects of Tally Software and its application in various areas of a business 5. Prepare financial statements and extracts reports 6. Compare the existing ERP model and the model required
	PCCOQ20 – TALLY (PRACTICALS)	1. Post transactions in Tally Software and generate required reports and financial statements 2. Calculate GST for various purchase and sales transactions 3. Compute and ascertain outstanding interests, bills receivable and payable using

		Tally Software
	PCCOR20 - PROJECT	1. Conduct a survey about a topic on Commerce, Marketing, Finance or Social Sciences 2. Prepare a Research Report on the study and its findings using relevant data analysis 3. Suggest to organizations and the society regarding various research problems
	PECOG20 – ELECTIVE IV A: BUSINESS ENVIRONMENT	1. Familiarize with business environment and financial system 2. Cognise on economic and non-economic environment 3. To understand the constitutional and legal environment in India 4. To facilitate the knowledge on socio-cultural environment 5. To be aware on technical and global environment
	PECOH20 – ELECTIVE IVB: LEGAL ASPECTS OF BUSINESS	1. To familiarize with the role of various personnel in governing corporate entities 2. To file a complaint in case of any injustice happening to a consumer 3. To understand the importance of patents, copyrights, etc. and also the mode of safeguarding one's intellectual property right 4. To facilitate the knowledge on laws governing cyber activity and information technology 5. To comprehend any insurance policy or scheme
	PICOD20 – INDEPENDENT ELECTIVE IV B: ENTREPRENEURIAL DEVELOPMENT	1.To develop entrepreneurial skills and start up a new business. 2. To understand and acquire knowledge on support services provided to entrepreneurs by different agencies for entrepreneurial development. 3. To identify and formulate business proposals. 4. To understand the role of government in entrepreneurial development. 5. To understand the position and problems faced by women entrepreneurs.
B.Com (Banking and Insurance)	UCBIA20 - FUNDAMENTALS OF BANKING	1. Identifies various types of Bank. 2. Able to access Bank account 3. Able to utilize variety of negotiable instruments 4. Able to analyze the role of paying Banker 5. Able to identify customers rights and Sort-out issues through Banking ombudsman
	UCBIB20 - Principles of Accounting	1. Acquire conceptual knowledge on basics of accounting 2. Identity events that need to be recorded in the accounting statements. 3. Prepares final accounts 4. Identify and prepare various subsidiary books 5. Able to prepare Bank Reconciliation statemen

	UCBIC20 - PRINCIPLES OF INSURANCE	1. Understands basic Concepts and principles of insurance 2. Able to differentiate Life and Non-Life insurance polices 3. Able to follow the procedures to apply for fire insurance Policy and settlement of claim 4. Able to claim settlement from marine insurance Policy able to choose various insurance 5. Policies based on their needs
	UCBID20 - FINANCIAL ACCOUNTING	1. Able to calculate depreciation for fixed assets. 2. Able to Compare, Contrast, and solve single entry to double entry system. 3. Able to prepare Bill of exchange account 4. Identifies and differentiate hire purchase and instalment system 5. Prepare Fire Insurance Claim Statements
	USBIA120/ USBIA220 SBE I - BUSINESS COMMUNICATION	1. Demonstrate students for Effective Business communication skills 2. Able to prepare business related letters 3. Able to prepare various types of Bank correspondence 4. Able to prepare Insurance correspondence 5. Able to prepare Business reports
	UCBIE20 - BANKING LEGALITIES AND REGULATIONS	1. Understands basic legal and regulatory framework of the banking system 2. Able to access various banking operations 3. Acquire knowledge about banking laws and their regulations 4. Aware of debt recovery procedures 5. Aware of Consumer Rights.
	UCBIF20 -COST ACCOUNTING	1. Familiarize the concepts of Cost accounting 2. Apply material control techniques. 3. Measures labour cost and overhead cost. 4. Prepares Process accounts 5. Evaluates profit or loss of a contract.
	UCBIG20 PRINCIPLES OF MANAGEMENT	1. Understands the Conceptual idea of management. 2. Demonstrate the skills of planning and decision making. 3. Aware of principles of organizing. 4. Familiarize with motivational factors. 5. Identifies various leadership styles.
	UEBIA20 MARKETING IN BANKING AND INSURANCE	1. Understands the Concepts of service marketing. 2. Identifies the role of 7P's in service marketing 3. Differentiates internal marketing from external marketing.

		4. Identifies customer relationship management of any service sector. Acquires the knowledge on marketing mix in marketing Banking and Insurance products.
	UEBIB20 - ENTREPRENEURSHIP DEVELOPMENT	1. Understands the Concepts of Entrepreneurship. 2. Apply for financial assistance. 3. Develops new business ideas. 4. Evaluates entrepreneurial development programme and related schemes. 5. Establish as a woman entrepreneur and Contribute to the society.
	UAMEA20 - MANAGERIAL ECONOMICS	1. Understand the Concepts of Managerial Economics. 2. Able to analyze the demand patterns of the market. 3. Able to compute Breakeven Point. 4. Able to Compare various pricing strategies prevailing in the market. 5. Demonstrates the decision -making skills under different marketing structure.
	USBIC20 -BANKING AND INSURANCE PRACTICALS	1. Able to fill the forms related to banking sector 2. Able to fill the various loan applications forms 3. Access the E - banking facilities 4. Able to fill the Insurance forms 5. Ability to fill the claim forms
	UCBIH20 - Regulatory Framework of Business and Insurance	1. Able to understand the provisions of Indian Contract Act 1972. 2. Acquire knowledge on the sale of goods act. 3. Aware of various acts related to Insurance. 4. Understands the provisions of IRDA act. 5. Able to choose suitable insurance Policies based on their needs.
	UCBII20- ACCOUNTING FOR MANAGEMENT	1. Understands management accounting. 2. Analyze various ratios and develops capability to make decision. 3. Prepares Fund Flow statement. 4. Prepares cashflow statement. Calculates marginal cost.
	UCBIJ20- RESEARCH METHODOLOGY	1. Understands research and its procedures. 2. Identifies problem and use SPSS to analyze it. 3. Identifies appropriate sample size and sampling methods for research 4. Apply a suitable data collection method to extract reliable information 5. Prepares project report with appropriate suggestions contributing to the society
	UAIBA20- INTERNATIONAL BUSINESS	1. Understands the impact of globalization towards International business 2. Aware about the functions of WTO, and UNCTAD. 3. Ability to make money management decisions.

		4. Understands various operations involved in International business. 5. Aware of documents required for export and import.
	USBID420 HUMAN RESOURCE MANAGEMENT	1. Understands the need for Human resource management. 2.Demonstrates the knowledge of differentiating Job evaluation and job analysis. 3 Identifies various motivational factors. 4.Understands the Recruitment procedure and selection Policy of various sectors. 5.Able to identify the type of Training method and performance appraisal method required.
	UCBIL20 ACCOUNTING FOR BANKING AND INSURANCE	1. Understands the procedures for issue of shares and able to apply for shares in the Companies. 2. Able to Compute accounts related to redemption of preference shares 3. Prepares final accounts life insurance Companies as per IRDA regulations. 4. Prepares final accounts of marine insurance Companies as per IRDA regulations. 5. Prepares profit &loss accounts and Balance sheet of Banking Companies
	UCBIM20 CORPORATE LAWS	1. Understands the frameworks of The Companies Act 2013. 2. Identifies the procedures of appointment and role of directors. 3. Understands and differentiates the need for articles of association and memorandum of association. 4. Aware and apply the knowledge about rights of employees. 5. Finds out the reason for winding up of Companies.
	UCBIN20 PRACTICAL AUDITING	1. Students will be versed in Concepts of auditing 2. Apply various audit programme 3. Able to vouch various trading transactions 4. Able to evaluate various assets and liabilities 5. Able to prepare audit report
	UCBIO20 PROJECT	1. Conduct research independently 2. Demonstrate the skill of working on SPSS 3. Carry out research in specialized areas like Bank and Insurance sector. Transmit their knowledge to the society.
	UGBIA520/ UGBIA620 BANKING SYSTEM IN INDIA	1. To provide basic knowledge about banking and its operation. 2. To impart thorough knowledge on banking structure in India. 3. To understand the functions of Reserve Bank of India. 4. To understand and access Digital Banking. 5. To transact using different modes of Digital payment.
	USBIF520/ USBIE620	1. Able to communicate effectively.

	BANKING AND BUSINESS CORRESPONDENCE	2. Able to draft letters to Banks 3. Able to draft letter to an insurance company 4. Demonstrates better performance in interview 5. Create own resume and able to self -evaluate.
	USBIE520/USBIE620 PRACTICAL ASPECTS OF INCOME TAX AND E-FILLING	1. Understands set off and carry forward of losses. 2. Able to Compute Total Income. 3. Able to identify E-filing from regular filing returns. 4. Able to file ITR online. 5. Understands the Concept of XBRL.
	UCBIQ20 FINANCIAL MANAGEMENT	1. Understands the role of financial manager. 2. Analyze the complexities associated with management of cost of funds in the capital structure. 3. Recognize the factors that determines optimum capital structure. 4. Compute leverage of a company 5. Identify and analyze various sources of capital.
	SEMESTER- VI UCBIS20- PRACTICAL TALLY	1. Creates Trading, Profit and Loss account. 2. Prepares Balance sheet using Single and Multiple Ledger. 3. Calculates GST and prepares tax statement 4. Prepares Bank Reconciliation Statement. 5. Analyze and prepares stock summary.
	UEBIE20 FINANCIAL SERVICES MANAGEMENT	1. Understands the Concepts of merchant banking 2. Able to follow the procedures of leasing and factoring 3. Assess various methods of financing 4. Understand the functions of credit rating agencies 5. Create DEMAT account and access online stock trading
	UEBIF20 MARKETING	1. Understands the concept of marketing and consumer behavior 2. Able to identify brand and build brand loyalty. 3. Understands different methods of pricing 4. Able to promote a product. 5. Able to buy and sell through online marketing.
B.Sc Biochemistry	UCBCA20 - BIOORGANIC CHEMISTRY	1. Outline the structure, properties and biological importance of carbohydrates. 2. Classify the structure and functions of amino acids along with proteins. 3. Build an idea about the role of lipids in the living system. 4. Assess the structural features of genetic material. 5. Explain the crucial role of vitamins and minerals for maintaining healthy life.

	UCBCB20 CELL BIOLOGY	1. Describe cell as the basic unit of life, its structural organization and cytoskeleton 2. Develop knowledge about the functions of various subcellular organelles 3. Identify the type of cell division processes and its significance 4. Recall on the components of cell membrane and its role in maintaining cell function 5. Examine clearly about the mechanism of transport across the membrane
	UCBCC20 MAIN PRACTICAL – I	1. Apply the safety rules in the laboratory 2. Use the measuring technique to weigh the compounds 3. Analyses quantitatively the biomolecules and certain mineral components 4. Identify the carbohydrate and amino acids qualitatively 5. Explain the idea on the cell division process
	UCBCD20 - BIOCHEMICAL TECHNIQUES	1. Develop the ability to apply the principles of biochemical techniques 2. Compare the difference between various methods of chromatography 3. Explain how electrophoresis and centrifugation facilitates the separation of molecules 4. Analyse certain functionalities of bio molecules by using spectroscopic techniques 5. Compare natural and artificial radiation source and its importance
	UCBCE20 – PHYSIOLOGY AND NUTRITION	1. Outline the mechanism of breathing and the circulatory system 2. Describe the basic components and functions of the digestive system 3. Compile the functions of the urinary system and the physiology of muscle 4. Explain the central and peripheral nervous system organization 5. Identify the nutrients in food and their functions in maintaining health
	UCBCF20 MAIN PRACTICAL - II	1. Work safely and effectively in a laboratory 2. Implement experimental protocol, and adapt them to plan and carry out simple colorimetric estimation 3. Explain the basic principles involved in isolation of bio molecules from various source 4. Analyse, interpret and report the results of their biochemical experiments
	UCBCG20 - ENZYMES AND INTERMEDIARY METABOLISM	1. Describe the properties, hypothesis and IUB classification of enzymes 2. Discuss the kinetics of enzyme catalyzed reactions, enzyme immobilization and applications of enzymes and their future potential 3. List the major pathways of carbohydrates metabolism and discuss their bioenergetics and regulation 4. Compile the catabolism of amino acid and metabolism of lipids with their significance 5. Revise the metabolic activity of tissues and organ with their function

	UCBCH20 – ENDOCRINOLOGY	1. Identify the various endocrine glands, morphology and their relevant hormones secreted 2. Know the nature and structure of Hormones 3. Demonstrate the mechanisms of hormone action 4. Explain the functions of hormones 5. Analyze the clinical disorders of hormones
	UEBCA20- ELECTIVE I A: IMMUNOLOGY	1. Outline the cell types and organ present in the immune response. 2. Identify the role of MHC antigens. 3. Discuss the basic techniques of antigen and antibody interactions 4. Compare the spectrum of autoimmune diseases. 5. Explain the stages of transplantation
	UEBCB20 - ELECTIVE I B: ENVIRONMENTAL TOXICOLOGY	1. Explain the properties of pollutants, effects, origin and occurrence in the environment. 2. Use clinical and laboratory findings in the treatment of acute toxic exposures. 3. Compare and interpret the results of occupational exposure assessments within the context of safety assessments. 4. Identify signs and symptoms of important toxic syndromes. 5. Discus the role of poison information services and systems for the surveillance of Poisoning.
	USBCC20 – SBE: ENTREPRENEURIAL BIOCHEMISTRY	1. Explain the theory of entrepreneurship and its practical implementation. 2. Explore and experience the joy of creating small business ideas. 3. Identify strategic marketing planning and mobilize resources for future growth, development and protection of their enterprise. 4. Implement market opportunities into business plan. 5. Re-construct and build a mindset focusing on unique approach to market opportunities.
	UCBCI20 - MOLECULAR BIOLOGY	1. Demonstrate the nature of Genes 2. Analyze the blueprint of life 3. Describe the mechanism of replication 4. Illustrate the mechanism of Transcription 5. Demonstrate the features of Genetic code and mechanism of Translation
	UEBCC20- ELECTIVE II A: CLINICAL BIOCHEMISTRY	1. Discuss the disorders of carbohydrate metabolism. 2. Outline the role of serum lipids. 3. Describe the types of jaundice and serum enzyme activities in diseases.

		4. Identify various renal disorders and examination of gastric residum. 5. Compare the application of diagnostic enzymes.
	UEBCD20- PHARMACOLOGY	1. Classify different dosage forms of drug 2. Discuss the basic understanding of detoxification mechanisms 3. Compare the structure and uses of antibiotics available 4. Outline the clinical applications, side effects and toxicities of cardiovascular drugs 5. List out commonly used analgesic and anesthetic drug classes
	UEBCE20 – ELECTIVE III A: BIOTECHNOLOGY	1. Recall the steps involved in recombinant DNA technology. 2. Outline the role of vector in gene technology and explain the construction of Genomic and cDNA library and their importance 3. Explain the principles of plant tissue and animal cell culture and summarize the methods used to produce transgenic plants and animals. 4. Identify and debate the ethical and social issues in the field of biotechnology and get insight in application of rDNA technology 5. Discuss the various aspects of bioprocess technology
	UEBCF20 - ELECTIVE III B: PLANT BIOCHEMISTRY	1. Describe the structural features of plant cell and phytohormones. 2. Outline the types of photosynthetic pigments. 3. Create the impact of nitrogen, sulphur and carbon cycle on nature. 4. Compile the mechanism of seed germination. 5. Identify the antioxidant potential and role of secondary metabolites.
	USBCD 20 – SBE- IV - MEDICAL LABORATORY TECHNOLOGY	1. Outline the organization of a laboratory for its efficient functioning 2. Discuss the various methods of blood collection and its preservation 3. Evaluate the significance of urine analysis and its correlation with disease 4. Demonstrate about the blood transfusion method 5. Apply histopathological techniques in detecting abnormal cells
	UCBCJ20- MAIN PRACTICAL -III	1. Apply the safety measures in the laboratory 2. Predict the biochemical laboratory analysis. 3. Analyse the presence and absence of abnormalities in blood 4. Assess the presence and absence of abnormalities in urine.
	UCBCK20- MAIN PRACTICAL –IV	1. Apply the safety measures in the laboratory 2. Explain the role of anticoagulants 3. Compare and Contrast on biological specimens 4. Analyze the biological sample for the enzyme activity
	USBCA20- NUTRITIONAL	1. Explain the functions of specific nutrients in maintaining health.

	BIOCHEMISTRY	2. Describe the role of antioxidants. 3. Use a balanced diet for diseased conditions. 4. Discuss basic principles and practices of common food preservation methods. 5. Discuss the various aspects of protein quality.
	USBCBN20- SBE: HEALTH CARE FOR WOMEN	1. Understand the common health problems of women. 2. Describe the function of Estrogen and Progesterone hormone. 3. Outline the Stages of women hood. 4. Discuss the types of anemia and obesity. 5. Gain knowledge to overcome PCOS, Ovarian cancer and Depression.
	UGBCA20– NON-MAJOR ELECTIVE - DISEASES AND TREATMENT	1. Understand the concept of immune system, blood and bone diseases. 2. Know the pathology of liver and lung diseases. 3. Acquire a broad knowledge about the deadliest diseases in the world. 4. Understand about the pathophysiology of cardiovascular and neurological diseases. 5. Learn the various types of skin diseases.
	UGBCB20 – NON-MAJOR ELECTIVE: THERAPEUTIC AGENTS	1. Analyze the drug dosage forms and its mechanism of action 2. Assess the role of vaccines in preventing diseases 3. Outline the role of antibiotics and its side effects 4. Acquire knowledge on the medicinal therapy for various health conditions and function of medicinal plants as therapeutics 5. Utilize the importance of first aid in accidents to preserve life.
M. Sc Biochemistry	PCBCA20 BIOMOLECULES	1. Outline the structural features, properties and biological importance of carbohydrates 2. Attain idea on the structural and biological aspects of proteins 3. Examine the structure of nucleic acids, its isolation and sequencing techniques 4. Gain knowledge on the structure, different forms and significance of lipids in the system 5. List out the significance of vitamins, its deficiency diseases and about the porphyrin ring containing molecules in living system
	PCBCB20 HUMAN PHYSIOLOGY AND NUTRITION	1. Outline the physiological system of the human body. 2. Describe the general function of each organ system. 3. Assess the activities of organs for maximum efficiency. 4. Explain the physiology of muscle and neurotransmitters. 5. Utilize knowledge on nutrients with their deficiencies.
	PCBCC20 CELL BIOLOGY	1. Relate cell as basic unit of life, its structure, organization and importance of molecular motors

		2. Discuss about the various sub-cellular components of cells and its functions in the biological system 3. Assess the knowledge on techniques adopted for the identification of cellular components and cancerous cell 4. Identify the different types of cell-cell communication and its significance 5. Describe clearly about the mechanism of cell signalling and cell death
	PEBCA20 ELECTIVE I A: BIOPHYSICAL CHEMISTRY	1. Demonstrate the concept of bioenergetics and its importance 2. Describe the spectroscopic techniques – NMR, UV and MS 3. Define and recognize covalent bonding between atoms in molecules. 4. Classify organic molecules by their functional groups 5. Compare the isomeric relationship
	PEBCB20 ELECTIVE I B : PHARMACEUTICAL BIOCHEMISTRY	1. Outline the basic scientific concepts related to mechanism of drug action. 2. Assess the drug tolerance and the factors that modify the effect of drugs. 3. Explain the use of genetically engineered methods on novel drug delivery systems. 4. Discuss the mechanism of action of drugs in the therapy of specific diseases. 5. Use the medicinal plants in drugs as a curative
	PCBCD20 ANALYTICAL BIOCHEMISTRY	1. Identify the behavior of molecules and prioritize related analytical tools. 2. Interpret and use the results from a given chromatographic technique. 3. Apply the electrophoretic techniques for the separation of proteins and nucleic acids. 4. Pursue knowledge about centrifugation and radioactivity and critically assess advances with in the field. 5. Categorize, evaluate and implement a suitable technique for a given analytical problem.
	PCBCE20 ENZYMOLOGY	1. List the enzyme properties, nomenclature and purification of enzymes 2. Apply the biochemical calculation for enzyme kinetics 3. Compare methods for enzyme catalysis and various methods of inhibition 4. Outline the affect of coenzymes and isoenzymes in enzyme catalysis. 5. Explain various industrial and clinical applications of enzymes as a catalyst in industries and also as a therapeutic aid.
	PCBCF20 INTERMEDIARY METABOLISM	1. Restate in own words how reduced electron carriers are used to generate ATP via Electron Transport System in Mitochondria. 2. Translate the reactions catalyzed by different Enzymes in metabolic pathway. 3. Compare the important characteristics of metabolic pathways and assess their regulation.

		4. Analyze complex chemical reactions and draw logical conclusion by interrelating 5. metabolism. 6. Interpret how plants convert energy to nourish themselves.
	PEBCC20 ELECTIVE II A: ECOLOGY, EVOLUTION AND DEVELOPMENTAL BIOLOGY	1. Outline the concept of ecosystem and its interaction. 2. Attain an idea on the evolution and population genetics. 3. Describe the structures and the development of the embryo at different stages. 4. Explain the insight on morphogenesis and organogenesis in plants 5. Gain knowledge on the chromosome mapping
	PEBCD20 ELECTIVE II B: TOXICOLOGY	1. Outline the scope and factors influencing toxicology 2. Explain the clinical and laboratory findings in the treatment of acute toxic exposures 3. Assess various methods of toxicity testing 4. Discuss the effects of toxic substances on molecular and cellular levels 5. Use the knowledge of air pollutants in the assessment of occupational hazards
	PCBCG20 MAIN PRACTICAL - I	1. Discuss qualitative and quantitative analysis of various biomolecules 2. Explain the isolation of biomolecules from biological samples 3. Apply the practical knowledge to determine hemoglobin, clotting time and prothrombin time.
	PCBCH20 MAIN PRACTICAL – II	1. Identify and purify biomolecules in a mixture by chromatographic technique. 2. Asses the optimum pH and optimum temperature of enzymes 3. Explain the basic principle involved in intermediary metabolism
	PCBCI20 ADVANCED DOCRINOLOGY	1. Identify the structure and functions of endocrine glands and hormones 2. Demonstrate the mechanisms of hormonal action and the clinical disorders of hormones 3. Examine the symptoms of the patients and relate it to hormones 4. Identify the difference in the mechanism of cell to cell communication 5. Explain the differences between male and female gonads.
	PCBCJ20 ADVANCED IMMUNOLOGY	1. Identify various mechanisms that regulate immune response. 2. Compare and contrast innate and adaptive immunity. 3. Outline the cell types and organ present in the immune response. 4. Discuss the reason for different vaccination. 5. Communicate the adverse effect of immunodeficiency disorder.
	PCBCK20 ADVANCED BIOTECHNOLOGY	1. Illustrate the tools and strategies used in genetic engineering. 2. Apply the knowledge of genetic engineering in problem solving and in practice. 3. Categorize how plant and animal cells are cultured and genetically manipulated in laboratory. 4. Make use of the various steps in the development of a biotechnology derived products

		5. Report the applications of genetic engineering technique in basic and applied experimental biology.
	PEBCE20 ELECTIVE III A: MICROBIOLOGY	1. Recall the taxonomy, morphological features and division process of microbes 2. Outline the microbial growth and its metabolism 3. Apply the microbial culture technique 4. Gain knowledge on the replication processes in microbes 5. Identify the various infectious diseases, its causative agents and antimicrobial drugs
	ELECTIVE III B: RESEARCH METHODOLOGY	1. Design the research work 2. Gain an idea on the role of biostatistics in research. 3. Understand the significance of internet in research 4. Develop the understanding on database management system 5. Practice the concepts of animal studies and CPCSEA guidelines in research
	PCBCL20 MOLECULAR BIOLOGY	1. Demonstrate the nature and role of Gene in life activity 2. Describe the blueprint of life and its functions 3. Outline the mechanism of Replication 4. Outline the role of Transcription 5. Demonstrate the features of Genetic code and mechanism of Translation
	PCBCM20 ADVANCED CLINICAL BIOCHEMISTRY	1. Apply the process of collection, preservation and storage of blood. 2. Communicate the disorders of carbohydrate metabolism. 3. Outline the significance of proteins and nucleic acid. 4. Compare the liver and renal disorders. 5. Discuss the role of diagnostic enzymes.
	PEBCG20 ELECTIVE – IV A: PLANT BIOCHEMISTRY	1. Identify various natural and artificial ways to propagate plants. 2. Discuss the function and composition of different plant structures. 3. Describe the processes of germination and plant growth. 4. Explain the role of plant growth regulators and plant tissue culture 5. Perform the calculations to predict expected plants by experiments.
	PEBCH20 ELECTIVE IV- B: HERBAL THERAPY	1. Describe the concepts of Pharmacognosy. 2. Explain the classification of medicinal plants. 3. Outline the different parts of plant. 4. Predict the Herbal medicines for Human ailments. 5. Apply the knowledge on the important metabolic pathways in plants.
	PCBCH20 MAIN PRACTICAL – III	1. Analyse the prevalence and impact of endocrine hormone in regulating health. 2. Use the practical skill for diagnosing immunological reaction in relation to disease condition.

		3. Apply tissue culture technique and fermentation process for various applications.
	PCBCO20 MAIN PRACTICAL IV	1. Utilize practical knowledge and skill for diagnosing various diseases using biochemical analysis in blood specimen 2. Demonstrate various pathological conditions related to abnormal constituents in urine
	PIBCA20 ORGANIC FARMING	1. Analyze the importance of organic farming 2. Apply the concept of organic farming 3. Relate the importance of plant protection 4. Use the organic methods for plant cultivation 5. Plan the concept of income generation through organic farming and terrace gardening
	PIBCB20 FOOD PRESERVATION	1. Outline the role of microbes in food spoilage and methods adopted to overcome microbial food spoilage 2. Apply the general methods for preserving fruits and vegetables 3. Find the methods of food preservation 4. Explain the methods for identifying food spoilage 5. Use the methods for preserving non-vegetarian foods/ meat products
	PIBCC20 HORTICULTURE	1. Recall the significance of horticulture 2. Outline the impact of soil nature on horticulture 3. Apply the concept of hybrid to enhance yield 4. Gain knowledge on cropping techniques and harvesting methods 5. Identify the role of gardening in common places
	PIBCD20 CANCER BIOLOGY	1. Describe the latest techniques in the diagnosis and treatment of cancer 2. Asses the contribution of environmental and genetic factors to cancer causation 3. Use inductive and deductive reasoning to evaluate the biological mechanisms that lead to the induction of cancer 4. Discuss the principle, clinical significance and cascade of metastasis 5. Examine the basic concepts of clinical research in oncology
	PIBCE20 NANOBIOTECHNOLOGY	1. Apply the essential role of Nanoscience. 2. Outline the prospective of Nano biology and Nano sensors. 3. Discuss the Nanoparticle drug base delivery systems. 4. Create knowledge to develop Nanomaterials 5. Identify the role of plants in Nanoparticle synthesis.
	PIBCF20 STEM CELL TECHNOLOGY	1.Relate the importance of stem cell therapy. 2. Apply the concept of stem cell development. 3. Analyze the importance of ethics in stem cell and gene therapy. 4. Use hematopoietic stem cells in treating blood related disorders and diseases.

		5. Identify the importance of various stem cells in therapeutic applications.
	PIBCG20 PSYCHOLOGY	1.Apply the principles of psychology in day-to-day life for a better understanding of oneself and others. 2. Compare and Contrast the biological basis of memory and forgetting. 3. Describe Language acquisition and the role Language plays in Communication and Thought. 4. Recognize the importance of Learning and Motivation. 5. Critically evaluate the fundamental processes underlying human behavior.
	PIBCH20 ENTREPRENEURIAL BIOCHEMISTRY	1. Describe the dynamic role of entrepreneurship and small business. 2. Identify and implement the role of entrepreneur towards society. 3. Create and explain innovative business ideas and market opportunities. 4. Generate bio-entrepreneurship and describe its components and forms. 5. Develop and validate skills needed to run a business successfully.
B.Sc Computer Science	UCCSA20 PROGRAMMING IN C	1. To learn the fundamental programming concepts and methodologies which are essential to build good C programs. 2. Develop a greater understanding of the issues involved in programming language design and implementation. 3. To practice the fundamental programming methodologies in the C/C++ programming language via laboratory experiences. 4. Develop an in-depth understanding of functional, logic, and object-oriented programming paradigms. 5. To code, document, test, and implement a well-structured, robust computer program using the C/C++ programming language.
	UCCSB20 PRACTICAL I: C	1. Exercise with basic structure of the C program, declaration and usage of variable. 2. Resolve mathematical and scientific problem. 3. Develop the programs using conditional and iterative statements. 4. Implement array and string concept in C program. 5. Write real time problems using user defined functions
	UCCSC20 –PRACTICAL II: DIGITAL LOGICS AND FUNDAMENTALS	1. The Learners will be able to 2. Understand working of logic families and logic gates. 3. To minimize the Boolean expression using Boolean algebra. 4. Design and analyze the combinational and sequential logic circuits.

		5. Simulate digital circuits and implement them using hardware component. 6. Design and implementation of combinational circuits.
	UCCSD20 –DATA STRUCTURES WITH C++	1. Describe the procedural and object-oriented paradigm with concepts of streams, classes, functions, data and objects. 2. Understand dynamic memory management techniques using pointers, constructors, destructors, etc. 3. Describe the concept of function overloading, operator overloading, virtual functions. 4. Identify problem involving trees and binary search trees. 5. Analyse graphs and Describe the hash function and concepts of collision and its resolution methods.
	UCCSE20- PRACTICAL III:DATA STRUCTURES WITH C++	1. Identify the appropriate data structure and algorithm for solving the real world problems. 2. Implement stack and queue techniques using arrays and pointers. 3. Implement the data structure algorithm for polynomial addition. 4. To know the concept of singly linked list. 5. To implement the concept of tree traversals using the algorithm.
	UCCSF20 - PRACTICAL IV: MICROPROCESSOR	1. Students are able to understand the Architecture of a typical microprocessor. 2. It helps to understand different addressing modes and instruction of 8086 design and to develop assembly language programs using software interrupts. 3. To understand the concepts of Instruction sets. 4. To write the assembly code for 8 bit and 16 bit data manipulation. 5. To write the assembly code for Sorting, reversing elements.
	UCCSG20 - JAVA PROGRAMMING	1. Able to understand the use of OOPs concepts. 2. Able to solve real world problems using OOP techniques. To understand the use of polymorphism and Inheritance. 3. Able to understand the use of Packages and Interface in java. 4. Able to develop and understand exception handling, multithreaded applications with synchronization. 5. Able to design GUI based applications and develop AWT and applets for web applications.
	UCCSH20 PRACTICAL-V:	1. Explain about basic Java language syntax and semantics to write Java programs and use concepts such as variables, conditional and iterative execution methods etc.

	PROGRAMMING IN JAVA	2. Understand the fundamentals of object-oriented programming in Java, including defining classes, objects, invoking methods and I/O Streams. 3. Demonstrate the concepts of Packages and Interface. 4. Evaluate the Java programs to implement error handling techniques using exception handling. 5. Design GUI based applications and develop applets for web applications.
	UCCSI20 PRACTICAL-VI: WINDOWS PROGRAMMING WITH VB.NET	1. Students will be capable to explain the concepts of windows programming 2. Students will be able to create windows by using different basic elements and resources. 3. Develop real time applications using VB.NET. 4. Understand the impact of VB.NET on business. 5. Create a user interface following good GUI design guidelines.
	UCCSJ20 – OPERATING SYSTEM	1. Acquire the important computer system resources and the role of operating system in their management policies and algorithms. 2. Understand the process management policies and scheduling of processes by CPU. 3. Evaluate the requirement for process synchronization and coordination handled by operating system. 4. Describe and analyze the memory management and its allocation policies. 5. Edify and evaluate the storage management policies with respect to different storage management technologies.
	UCCSK20 – PRACTICAL VII: LINUX	1. To become familiar with the GCC compiler, and files. 2. Understand the high-level structure of the Linux kernel both in concept and source code. 3. Acquire a detailed understanding of one aspect (the scheduler) of the Linux kernel. 4. To learn to develop software for Linux systems. 5. To obtain a foundation for an advanced course in operating systems.
	UCCSL20 – PRACTICAL VIII: PYTHON PROGRAMMING	1. Understand and comprehend the basics of python programming. 2. Understand and implement modular approach using Python. 3. Learn and implement various data structures provided by python library including string, list, dictionary and its operations etc. 4. Understands about files and its applications. 5. Develop real-world applications using oops, files and exception handling provided by python.
	UCCSM20 -RELATIONAL DATABASE	1. Demonstrate an understanding of the elementary & advanced features of RDBMS. 2. Apply the SQL commands to create tables and Triggers, insert/update/delete data,

	MANAGEMENT SYSTEMS	and query data in a relational DBMS. 3. Analyze and Design a database based on a data model considering the normalization to a specified level. 4. Apply the storage size of the database and design appropriate storage techniques. 5. Analyze the requirements of transaction processing, concurrency control and avoid redundancy.
	UCCSO20 DATA COMMUNICATION AND NETWORKING	1. To gain expertise in some specific areas of networking such as the design and maintenance of individual networks. 2. Explain the types of Transmission Media with Real-Time Applications. 3. Apply Time and Frequency concept of analysis. 4. Manage Network functions for an Organization. 5. Analyze various Routing Algorithms and Protocols.
	UECSA20 - ELECTIVE - I A: SOFTWARE ENGINEERING	1. Apply the software engineering lifecycle by demonstrating competence in communication, planning, analysis, design, construction, and deployment. 2. Discuss the function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives. 3. Manage the time, processes and resources effectively by prioritizing competing demands to achieve personal and team goals Identify and analyzes the common threats in each domain 4. Understand architectural design in order to minimize the risks and errors. 5. Test the techniques for ensuring high quality software and understand the capabilities of cost estimation.
	UECSB20- ELECTIVE I B: DATA MINING	1. Understand Data Warehouse fundamentals and Data Mining Principles 2. Understand and implement classical algorithms in data mining and identify the application area of algorithms. 3. Compare and evaluate different data mining techniques like, prediction, clustering and association rule mining 4. Describe complex data types with respect to spatial and web mining. 5. Analyze the temporal mining techniques to detect patterns in the e-world.
	UCCSP20 PRACTICAL - IX: RDBMS	1. Understand, Appreciate and effectively explain the underlying concepts of Database technologies. Programming PL/SQL including stored procedures, stored functions, cursors, package. 2. Attain a good practical understanding of the Oracle. 3. Design and implement a database schema for a given problem-domain.

		4. Prepare various database tables and joins them using SQL commands. Analyze various aggregate functions using SQL commands. 5. Design and develop forms to select, insert, delete and update using Data Source Binding with the front end tool VB .NET.
	UCCSQ20- PRACTICAL X: .NET PROGRAMMING IN C#	1. Create user interactive web pages using .NET. Understanding different types of AI Agents and its Environments. 2. To develop, implement and creating Applications with C#. 3. Debug, compile, and run a simple application. 4. Create Mobile Application using .NET compact Framework. 5. Design and develop Web based applications on .NET.
	UCCSR20-INTERNET AND WEB PROGRAMMING	1. Acquire the basic concept of JavaScript. 2. Use operators, variables, arrays, control structures, functions and objects in JavaScript. 3. Create PHP programs that use various PHP library functions, and that manipulate files and directories. 4. Design a responsive web site using HTML, PHP, MySQL and Apache. 5. Students will be able to build dynamic web pages using JavaScript (Client Side Programming) and apply their knowledge to create interactive websites.
	UCCSS20 CLOUD COMPUTING	1. Understand the fundamental concepts in cloud computing technologies. 2. Analyze and integrate the cloud enabling services. 3. Analyze the architecture and concept of different cloud models: IaaS, PaaS, SaaS. 4. Understand and familiar with the deployment models. 5. Comprehend the Cloud Data Security concepts and how they are addressed with the security mechanisms.
	UECSC20 –ELECTIVE IIA:SOFTWARE TESTING	1. The Learners will be able to 2. Test various processes and continue quality improvement. 3. Verify types of errors and fault models. 4. Analyze methods of test generation from requirements. 5. Input space modeling using combinatorial designs. 6. Test adequacy assessment using control flow, data flow and program mutations
	UECSD20 - Elective – II B: DATA SCIENCE	1. Understand the key concepts in data science, its applications and the toolkit used by data scientists. 2. Explain how data is collected, managed and stored for data science. 3. Implement data collection and management.

		4. Use visualization tools for data visualization. 5. Possess the required knowledge and expertise to become a proficient data scientist.
	UECSE20- Elective – III A: ARTIFICIAL INTELLIGNECE	1. Understand different types of AI Agents and its Environments. 2. Know Various AI Search Algorithms (uninformed, informed, heuristic search). 3. Understand the fundamentals of Knowledge representation (logic based, frame based). 4. Understand the different types of Learning. 5. Ability to apply knowledge representation, reasoning, and machine learning Techniques
	UECSF20 - ELECTIVE III B: COMPUTER GRAPHICS	1. Understand the basics of computer graphics, different graphics systems and applications of computer graphics. 2. Discuss various algorithms for scan conversion and filling of basic objects and their comparative analysis. 3. Use of geometric transformations on graphics objects and their application in composite form. 4. Apply clipping methods and its transformation to graphics display device. 5. Use suitable projections and visible surface detection techniques for display of 3D scene on 2D screen.
	UCCST20 - PRACTICAL XI: INTERNET AND WEB PROGRAMMING	1. Know variable naming rules and JavaScript data types. 2. Use operators, variables, arrays, control structures, functions and objects in JavaScript. 3. Demonstrate objects and arrays usage 4. Create PHP programs that use various PHP library functions, and that manipulate files and directories. 5. Validate user input and create cookies in PHP
	UCCSU20 - PRACTICAL XII: PROJECT WORK	1. Acquire practical knowledge on the implementationof the programming concepts learnt. 2. Motivate the Students to work in emerging/latest technologies. 3. Help the students to develop ability, to apply theoretical and practical tools/techniques. 4. To solve real life problems related to industry, academic institutions and research laboratories.

		5. Help the students to gain Self-confidence.
	UGCSEn20 - SKILL BASED ELECTIVE: DATA ANALYTICS USING DATA VISUALIZATION TOOLS	1. Understand the behavior of data. 2. To extend the current state of the art in data visualization. 3. To present data effectively through chart, map and dashboard. 4. Represent data graphically. 5. To implement Data Analytics efficiently.
	UGCSFn20 - SKILL BASED ELECTIVE: R PROGRAMMING	1. Understand the basics in R and RStudio Programming. 2. Use Vector, Arrays, Matrix and Data frames. 3. Demonstrate Math functions, Statistical functions and Family functions. 4. Create R programs that use various library functions, and that manipulate files and directories. 5. Learn to apply R programming for Text processing
	UGCSCn20 - SKILL BASED ELECTIVE:BASICS OF WEB DESIGN	1. Demonstrate competency in the use of common HTML code. 2. Support the development of web pages. 3. Create XML documents and Schemas. 4. Create website using HTML. 5. Write programs using XML.
	UGCSDn20 - SKILL BASED ELECTIVE: DESIGN AND ANIMATION	1. Understand Multimedia components using various tools and techniques. 2. Analyze and Interpret Multimedia Data. 3. Discuss about different types of media format and their properties. 4. Understand and apply principles of design into given projects. 5. Acquire and analyze different ideas about designs and its implementation.
	UGCSAn20: NON MAJOR ELECTIVE: STATISTICAL PACKAGE FOR SOCIAL SICENCE	1. Understand the basic workings of SPSS software using menus and buttons and perform basic statistical analysis. 2. Analyze data and create simple tables, charts and frequencies. 3. Introduce data analysis and perform basic statistical analysis. 4. *Analyze data for reporting descriptive statistics, graphics and correlations* Perform simple analysis of Two way sample and Chi-square tests.
B.C.A	UCCAA20 Programming in C	1. Introduce the students to understand the concept of basic programming- thereby reducing the design complexity and increasing the reusability of a component. 2. Construct the basic structure of C-programming, declaration and usage of variable. 3. Understand and develop conditional and iterative statements to write programs.

		4. Exercise C programs that uses array and string. 5. Develop user defined functions to solve real time problems 6. Exercise user defined data types including structures and union.
	UCCAB20- FUNDAMENTALS OF INFORMATION TECHNOLOGY	1. Understand the fundamental concepts of computers with the present level of knowledge of the students. 2. Identify the basic terminology used in computer programming. 3. Understand the basic taxonomy and terminology of the data communication networking. 4. Acquire the knowledge of Internet and its applications 5. Analyze the difference between an operating system and an application program
	UCCAC20 Practical I: C	1. Exercise with basic structure of the C program, declaration and usage of variable. 2. Resolve mathematical and scientific problem. 3. Develop the programs using conditional and iterative statements. 4. Implement array and string concept in C program. 5. Write real time problems using user defined functions 6. Describe the user defined data types including the concepts of structures and union.
	UCCAD20 PYTHON	1. Understand the Numbers, Math functions, Strings, List, Tuples and Dictionaries in Python 2. Express different Decision Making statements and Functions 3. Interpret Object oriented programming in Python 4. Explain how to design GUI Applications in Python and evaluate different database operations 5. Design and develop Client Server network applications using python
	UCCAE20 - COMPUTER ORGANIZATION AND ARCHITECTURE	1. Explain the organization of basic computer, its design and the design of control Unit. 2. Elaborate advanced concepts of computer architecture, Parallel Processing, Inter-processor communication and synchronization. 3. Demonstrate the working of central processing unit and RISC and CISC Architecture. 4. Describe the operations and language the register transfer, micro operations and input- output organization. 5. Understand the organization of memory and memory management hardware
	UCCAO20 – PRACTICAL V: PYTHON	1. To Understand the Numbers, Math functions, Strings, List, Tuples and Dictionaries in Python

		2. Express different Decision Making statements and Functions 3. Interpret Object oriented programming in Python 4. Explain how to design GUI Applications in Python and evaluate different database operations 5. Design and develop Client Server network applications using python
	UCCAG20-Data Structures	1. Discuss the concept of complexity of algorithms, data types, algorithms, Big O notation. 2. Apply basic data structures such as arrays, linked lists, stacks and queues. 3. Identify problem involving trees and binary search trees. 4. Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data using linked list. 5. Analyze graphs and describe the hash function and concepts of collision and its resolution methods.
	UCCAH20 - Java Programming	1. Able to understand the use of OOPs concepts. 2. Able to solve real world problems using OOP techniques. To understand the use of polymorphism and Inheritance. 3. Able to understand the use of Packages and Interface in java. 4. Able to develop and understand exception handling, multithreaded applications with synchronization. 5. Able to design GUI based applications and develop AWT and applets for web applications
	UCCAI20 - Design and Analysis of Algorithms	1. Define the basic concepts of algorithms and analyze the performance of algorithms. 2. Discuss various algorithm design techniques for developing algorithms 3. Identify the usage of set of rules design methods including the greedy approach, divide and overcome, dynamic programming, and certain. 4. Understand the variations among backtracking, graph coloring and 8 Queens problems 5. Understand NP completeness and identify different NP complete problems.
	UCCAJ20 - Practical - III: Java	1. Understand the fundamentals of object-oriented programming in Java, including defining classes, objects, invoking methods etc and I/O Streams. 2. Establish exception handling is used to minimize the errors in Java programming. 3. Demonstrate the concepts of Packages and Interface. 4. Evaluate the Java programs to implement error handling techniques using exception handling.

		5. Design GUI based applications and develop applets for web applications.
	UCCAK20 - Practical: Data Structures and Algorithms	1. Implement PUSH, POP and Add and delete operations of Stack using Arrays. 2. Explore the Infix to postfix conversion and binary tree traversals and its algorithms like depth first and breadth first traversal 3. Understanding polynomial addition and merge sort using Divide and Conquer Technique. 4. Implement travelling Salesman problem using Dynamic programming and Hashing with two collision techniques. 5. Implement PUSH, POP and Add and delete operations of Stack using Arrays.
	USCAA320 - SBE: ACCOUNTING SOFTWARE	1. Understand the basics in Tally and company creations 2. Creating vouchers, ledgers accounts, Balance Sheet 3. Demonstrate Profit And Loss Account and Reconciliation of the bank account. 4. Create company accounts that use various functions like Cost Category and Cost Centre 5. Learn to apply the tools & techniques in the interpretation of data for managerial decision – making.
	UCCAL20 -DATA COMMUNICATIONS AND NETWORKING	1. Describe the Functions of each layer in OSI and TCP/IP Model. 2. Explain the types of Transmission Media with Real-Time Applications. 3. Apply Time and Frequency concept of analysis. 4. Manage Network functions for an Organization. 5. Analyze various Routing Algorithms and Protocols.
	UCCAM20 – OPERATING SYSTEM	1. Acquire the important computer system resources and the role of operating system in their management policies and algorithms 2. Understand the process management policies and scheduling of processes by CPU. 3. Evaluate the requirement for process synchronization and coordination handled by operating system 4. Describe and analyze the memory management and its allocation policies 5. Entity use and evaluate the storage management policies with respect to different storage management technologies
	UCCAN20 - .NET PROGRAMMING	1. Understand the concepts of .NET Framework and C#. 2. Apply the usage of Methods, Arrays and Strings. 3. Interpret the concepts of Constructors, Inheritance and Interfaces.

		4. Analyze Operator Overloading, Delegates, Events and Exceptions. 5. Create Windows and Web - based Applications.
	UCCAO20 – PRACTICAL V: LINUX	1. Understand the high-level structure of the Linux kernel both in concept and source code. 2. Acquire a detailed understanding of one aspect (the scheduler) of the Linux kernel 3. To learn to develop software for Linux systems. 4. To obtain a foundation for an advanced course in operating systems. 5. Become familiar with the C language, gcc compiler, and make files to understand the high-level structure of the Linux kernel.
	UCCAP20 - PRACTICAL VI: .NET	1. Understand code solutions and compile C# projects within the .NET framework. 2. Create user interactive web pages using .NET. 3. To develop, implement and creating Applications with C#. 4. Debug, compile, and run a simple application. 5. Create Mobile Application using .NET compact Framework
	UCCAQ20 -Relational Database Management Systems	1. Demonstrate an understanding of the elementary & advanced features of DBMS & RDBMS 2. Write the SQL commands to create tables and Triggers, insert/update/delete data, and query data in a relational DBMS. 3. Analyze and Design a database based on a data model considering the normalization to a specified level. 4. Apply the storage size of the database and design appropriate storage techniques. Analyze the requirements of transaction processing, concurrency control Analyze and XML Structure
	UCCAR20 - Software Engineering	1. Apply the software engineering lifecycle by demonstrating competence in communication, planning, analysis, design, construction, and deployment. 2. Discuss the function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives 3. Manage the time, processes and resources effectively by prioritizing competing demands to achieve personal and team goals Identify and analyzes the common threats in each domain. 4. Understand architectural design in order to minimize the risks and errors.

		5. Test the techniques for ensuring high quality software and Understand the capabilities of cost estimation.
	UCCAS20 - Mobile Application Development	1. Understanding of Android and Android SDK and know about its development environment. Recognize the architecture of Android and its tools. Analyze Eclipse and Android Development Tools(ADT). 2. Understanding of the specific requirements, possibilities and challenges when developing for a mobile context. 3. Understanding of the interaction between user interface and underlying application infrastructure. 4. Define to plan and carry out a design work including developing a prototype that can be evaluated with a specified user group. 5. Develop practical skills and knowledge to construct software for a mobile application and the ability to reflect over possibilities and demands in collaborative software development.
	UECAA20 - Resource Management Techniques	1. Identify the role of computer in Operational Research techniques. 2. Apply linear programming to solve real-life applications. 3. Analyze Transportation Model and Solve optimization problems using dual simplex method. 4. Describe Assignment Model and Travelling Salesman Problem, Sequencing problem 5. Use PERT and CPM for problems in project management
	UECAB20 - Elective I B: Cloud Computing	1. Understand the fundamental concepts in cloud computing technologies. 2. Analyze and integrate the cloud enabling services. 3. Analyze the architecture and concept of different cloud models: IaaS, PaaS, SaaS. 4. Understand and familiar with the deployment models. Comprehend the Cloud Data Security concepts and how they are addressed with the security mechanisms.
	UECAC20 - Elective I C: Object Oriented Analysis and Design	1. Analyse, design, document the requirements through use case driven approach. 2. Identify, analyse, and model structural and behavioural concepts of the system. 3. Develop, explore the conceptual model into various scenarios and applications. 4. Apply the concepts of architectural design for deploying the code for software. 5. Apply the Testing Strategies and Debugging Principles for measuring the User Satisfaction

	UCCAU20 - Practical VIII: Mobile Application Development	1. Establishing the development environment 2. Implementing the layout to add action bar 3. Understanding the interfaces using views , menus and notification 4. Apply and learn multiple screens to emulate android application 5. Perform basic interaction with application. Change Android styles and themes
	UCCAV20 - INTERNET AND WEB PROGRAMMING	1. Acquire the basic concept of JavaScript. 2. Use operators, variables, arrays, control structures, functions and objects in JavaScript. 3. Create PHP programs that use various PHP library functions, and that manipulate files and directories. 4. Design a responsive web site using HTML, PHP, MySQL and Apache. 5. Students will be able to build dynamic web pages using JavaScript (Client Side Programming) and apply their knowledge to create interactive websites.
	UCCAW20 - Data Mining	1. Understand Data Warehouse fundamentals and Data Mining Principles 2. Understand and implement classical algorithms in data mining and identify the application area of algorithms. 3. Compare and evaluate different data mining techniques like, prediction, clustering and association rule mining 4. Describe complex data types with respect to spatial and web mining. 5. Analyze the temporal mining techniques to detect patterns in the e-world.
	UECAD20 - ELECTIVE – II A: CRYPTOGRAPHY	1. Classify the symmetric encryption techniques 2. Illustrate various Public key cryptographic techniques 3. Evaluate the authentication and hash algorithms. 4. Summarize the intrusion detection and its solutions to overcome the attacks. 5. Basic concepts of system level security
	UECAE20 - Elective II B: COMPUTER GRAPHICS	1. Understand the basic objectives and scope of computer graphics 2. To acquire knowledge on graphics hardware devices and software used. 3. Implement various algorithms to scan, convert the basic geometrical primitives, Transformations, Area filling, clipping. 4. Understand the concepts of and techniques used in 2D and 3D computer graphics,

		including viewing transformations, hierarchical modeling, color, lighting and texture 5. Understand the concepts of computer graphics, including viewing, projection, Perspective, modeling and transformation in two and three dimensions.
	UECAF20- Elective - III A: Mobile Computing	1. Understand the basic concepts of mobile computing. 2. Expand the network layer protocols and AdHoc networks. 3. Apply the basis of transport and application layer protocols. 4. Develop knowledge about different mobile platforms and application development. 5. Analyze security, energy efficiency, mobility, scalability, and their unique characteristics in wireless networks.
	UECAG20 – ELECTIVE – III B: ARTIFICIAL INTELLIGENCE	1. Understanding different types of AI Agents and its Environments. 2. Know Various AI Search Algorithms (uninformed, informed, heuristic search). 3. Understand the fundamentals of Knowledge representation (logic based, frame based). 4. Understand the different types of Learning. 5. Ability to apply knowledge representation, reasoning , and machine learning Techniques
	UCCAY20 -Practical X: INTERNET AND WEB PROGRAMMING	1. Know variable naming rules and JavaScript data types. 2. Use operators, variables, arrays, control structures, functions and objects in JavaScript. 3. Demonstrate objects and arrays usage 4. Create PHP programs that use various PHP library functions, and that manipulate files and directories. 5. Validate user input and create cookies in PHP
	USCSGn20 –SKILL BASED ELECTIVE: R PROGRAMMING	1. To understand and extend the current state of the art in data visualization. 4 To Understand the different data format and its graphical representation 2. To Identify the various data visualizations tools in the market and its features. 3. To provide skills present data effectively through chart, map and dashboard. 4. To Develop skills to present data effectively through chart, map and dashboard.
B.Sc Microbiology	UCMBA20 FUNDAMENTALS OF MICROBIOLOGY	1. Outline the history, recent developments and scope of Microbiology. 2. Utilize working mechanisms of basic light microscopes and electron microscopes with deep knowledge on the sample preparation and staining techniques. 3. Discuss important aspects of taxonomy from species to kingdoms and differentiation

		between prokaryotic and eukaryotic cells. 4. Explain the ultra-structure, arrangement and function of bacterial cell. 5. Employ Classical techniques of Microbial identification with their morphological, physiological and biochemical properties. 6. Demonstrate the sterilization and disinfection techniques
	UCMBB20 MICROBIAL PHYSIOLOGY AND METABOLISM	1. At the end of the course, the learners will be able to; 2. Discuss on various physical and chemical growth requirements of bacteria 3. Practically apply the knowledge in preparation of culture media for bacterial growth and identification 4. Equip with various techniques employed to measure microbial growth. 5. Evaluate different classes of antibiotics and their mode of actions, treatment strategies from clinical settings. 6. Explain the structural similarities and differences among various groups of fungi and algae along with its physiological properties 7. Outline microbial transport systems and mechanisms of energy conservation in metabolism.
	UCMBC20 CORE PRACTICAL I: BASIC TECHNIQUES IN MICROBIOLOGY	1. At the end of the course, the learners will be able to; 2. Perform cleaning, sterilization of glass wares and prepare culture media. 3. Competently cultivate bacteria in different types of media. 4. Analyze and employ different staining methods for the identification of bacteria. 5. Examine the different morphological forms of microbes. 6. Use Classical techniques for the identification of bacteria based on their biochemical properties 7. Identify the sensitivity and resistance patterns of bacteria
	UCMBD20 BASIC IMMUNOLOGY AND MICROBIAL GENETICS- I	1. At the end of the course, the learners will be able to; 2. Outline the history of immunology and immunohaematology. 3. Explain the basic concepts in immunology, serology and haematology. 4. Discuss the overall organization of the immune system and differentiate the humoral and cell mediated immune mechanisms. 5. Apply the principles and techniques involved in antigen-antibody interactions. 6. Describe the structure of DNA & RNA with their physical & chemical properties. 7. Familiarize with the process involved in the replication of DNA.
	UCMBE20 APPLIED IMMUNOLOGY	1. Outline the basic principle and mechanism of antigen and antibody reactions. 2. Discuss on the significance of autoimmune diseases and hypersensitivity reactions

	AND MICROBIAL GENETICS- II	3. Interpret on different types of vaccine and vaccination schedule. 4. Explain the gene transfer mechanisms between the prokaryotes and eukaryotes. 5. Identify mutations and DNA repair mechanisms. 6. Comprehend the process of protein synthesis and the methods of gene expression
	UCMBF20 CORE PRACTICAL II: BASIC AND APPLIED IMMUNOLOGY	1. Identify the ABO blood groups and its Rh types 2. Enumerate and observe various granulocytic and agranulocytic cells of immune system. 3. Diagnose the presence of syphilis by haemagglutination assay. 4. Perform serological diagnosis for the detection of typhoid, syphilis, rheumatoid factor and anti streptolysin 'o'. 5. Demonstrate the direct and indirect pregnancy testing procedure. 6. Quantitate the antigens and antibodies by performing immunodiffusion techniques.
	UCMBG18 MEDICAL BACTERIOLOGY AND MYCOLOGY	1. Outline the importance of Normal microbial flora of human body and Host-Parasite relationships. 2. Demonstrate the collection of various clinical specimens and processing it. 3. Explain about the diseases caused by the bacterial pathogens, prevention and treatment. 4. Discuss the different modes of transmission of bacterial diseases and its preventive measures. 5. Compare the morphological classification of fungi, and isolation of fungi from clinical specimen. 6. Compile the common mycotic diseases, their pathogenicity and various antifungal agents used for treatment.
	UCMBH20 FOOD, DAIRY AND INDUSTRIAL MICROBIOLOGY	1. Critique the role of microorganisms in food and the factors influencing their growth 2. Apply the principles and procedures involved in preservation of food 3. Identify the contaminating and spoilage causing microorganisms in various foods. 4. Analyze the significance of food borne diseases in association with public health and its preventive measures. 5. Formulate knowledge on the fermentation process with adequate information on the fermenters and identifying industrially important microorganisms. 6. Formulate knowledge on the fermentation process with adequate information on the fermenters and identifying industrially important microorganisms. 7. Discuss on the industrial production and purification of sauerkraut, cheese, yoghurt, organic solvents, beverages, vitamins and growth factors
	UCMBI20	1. Compare the use of various cloning vectors in gene cloning techniques.

	MOLECULAR BIOLOGY AND DNA TECHNOLOGY	2. Utilize knowledge on the applications of genetic engineering and strain improvement using mutational rDNA technology. 3. Apply the strategies of gene cloning techniques and Identify rDNA clones. 4. Compile the techniques of nucleic acid hybridization and DNA amplification.
	UEMBA20 ELECTIVE I A: FUNDAMENTALS OF CELL BIOLOGY	1. Compare the difference between plant cell and animal cell. 2. Analyze the basic components of prokaryotic and eukaryotic cells and the chemistry of its macromolecules. 3. Differentiate the roles of each cell organelles with its functions. 4. Compile the ultrastructure and function of nucleus and nucleolus. 5. Discuss on the different stages of cell division in prokaryotic and eukaryotic cells. 6. Outline the basic principles of osmosis, cell signalling and signal transduction.
	UEMBB20 ELECTIVE I B: ENTREPRENEURIAL MICROBIOLOGY	1.Define Industrial Microbiology and explain its historical development. 2.Outline on the importance of entrepreneur development and risk assessment. 3.Analyze the microbial cells as fermented products. 4.Demonstrate the procedures involved in mushroom cultivation and its storage method.
	UCMBJ20 MEDICAL VIROLOGY & PARASITOLOGY	1. Explain the properties, classification and cultivation of viruses. 2. Outline on the zoonotic and arthropod borne diseases. 3. Discuss about the oncogenic viruses. 4. Brief out on the importance of antiviral drugs and vaccines. 5. Describe the classification of parasites and demonstrate the laboratory diagnosis of parasitic diseases. 6. Compile the information on common parasites, protozoan and metazoan diseases.
	UCMBK18 MICROBIALECOLOGY AND SOIL MICROBIOLOGY	1. Compare the role of microbial communities in the environment. 2. Discuss on the significance of Aero and Water Microbiology. 3. Assess on the microbiological aspects of management of sewage and design the treatment procedures. 4. Outline on the importance of bioremediation and biodegradation of xenobiotic compounds.
	UEMBC20 ELECTIVE II A: MARINE MICROBIOLOGY	1. Outline about the different marine environment 2. Compare the microbial communities in the aquatic environment. 3. Discuss adaptations strategies of various extremophilic microorganisms, extremozymes and their importance in biotechnology. 4. Identify the kinetics of aquatic microbial population and microbial interactions – symbiosis and antagonism. 5. Describe about the marine food borne and water borne pathogens.

		6. Explain the production and biotechnological applications of novel marine microbial products
	UEMBD20 ELECTIVE II B: MICROBIAL NANOTECHNOLO GY	1. Outline evolution of nanoscience and hurdles in the development of nanotechnology. 2. Use tools in spectroscopy. 3. Discuss the role of microscopy in nanotechnology research. 4. Utilize nano materials for drug development and its application in nuclear medicine. 5. Apply nanotechnology for air and water treatment. 6. Become familiar with nanoscience education in india and abroad.
	UEMBE20 ELECTIVE III A: CYANOBACTERIOLOGY	1. Outline the diversity of cyanobacteria. 2. Discuss on the genomics of Cyanobacteria. 3. Explain the molecular biology of Cyanobacteria. 4. Describe the molecular regulation in Cyanobacteria. 5. Demonstrate the mass cultivation of Cyanobacteria.
	UEMBF20 - ELECTIVE III B - ADVANCED MICROBIOLOGY	1. Utilize microorganisms in the preparation of cosmetics. 2. Evaluate the biological potential in samples return from satellites and solar system. 3. Discuss the role of antimicrobial fabrics, carpets, tiles and colorants. 4. Produce bacteriostatic sanitary napkins and towels. 5. Produce bacteriostatic sanitary napkins and towels. 6. Comprehend on paper, rubber and plastic Microbiology
	UCMBL20 CORE PRACTICAL III: MEDICAL MICROBIOLOGY	1. Demonstrate collection, transport and processing of clinical specimens. 2. Perform staining techniques for the identification of bacteria. 3. Isolate and Identify the bacterial pathogens from various clinical specimens. 4. Prepare culture media for the cultivation of microorganisms 5. Perform quantitative urine analysis, germ tube test and estimation of worm burden in stool. 6. Analyze the clinical specimens for the examination of pathogenic fungi
	UCMBM20 CORE PRACTICAL IV: ECOLOGY, FOOD AND DAIRY MICROBIOLOGY	1. Assess the microbiological quality of raw milk by MBRT and Standard Plate Count Test. 2. Identify and enumerate bacteria and fungi from the spoiled foods and Rhizosphere soil. 3. Perform the microbial test to detect soil fertility. 4. Apply the technique for the isolation of yeast from food sources. 5. Analyze the potability of water by MPN test. Isolate and cultivate Rhizobium from root nodule

	USMBA20 SKILL BASED ELECTIVE: MUSHROOM TECHNOLOGY	1. Communicate information about scope and importance of mushrooms. 2. Formulate media used for cultivation of mushroom 3. Select the appropriate methods for spawn production. 4. Demonstrate mushroom cultivation technology and its preservation 5. Compile in detail about edible and poisonous mushrooms. 6. Utilize the nutritional and medicinal values of mushrooms
	USMBB20 SKILL BASED ELECTIVE: BIOINSTRUMENTATION	1. Outline the working principles of various laboratory equipments. 2. Demonstrate various types of centrifugation. 3. Discuss on the different techniques of gel electrophoresis. 4. Comprehend the principles and methods of blotting 5. Compile the techniques of chromatography. 6. Compile the techniques of chromatography.
	USMBC20 SKILL BASED ELECTIVE:DIAGNOSTIC MICROBIOLOGY	1. Explain general safety regulations and guidelines of microbiology laboratory. 2. Apply procedures in the collection and transport of clinical specimens 3. Examine and identify the pathogenic microorganisms from clinical specimens. 4. Perform serological and molecular methods for the diagnosis of diseases. 5. Determine the sensitivity and resistance pattern of bacterial pathogens to various antibiotics 6. Use safety precautions in the disposal of specimens and biohazardous medical wastes.
	USMBD20 SKILL BASED ELECTIVE: NUTRACEUTICALS AND FUNCTIONAL FOODS	1. Explain the historical perspective, classification, scope and future prospects of nutraceuticals. 2. Discuss the nutraceuticals constituents present in various food products. 3. Analyze food as remedies for the common disorders. 4. Outline genetically modified plants which are commercially available and their applications. 5. Develop general idea on the role of probiotics and prebiotics as nutraceuticals. 6. Communicate the pharmaceutical applications of genetically engineered plants.
	USMBE20 SKILL BASED ELECTIVE: COSMETOL OGY	1. Obtain information about significance of cosmetics and adulteration of natural products. 2. Formulate face packs, hair oils for different types of skin and hair. 3. Analyze the structure, function and types of skin. 4. Outline the biology of hair, hair growth cycle and scalp hygiene. 5. Utilize the natural herbs for skin, hair and oral care preparations. 6. Communicate the cosmeceutical applications of micro and macroalgae.

	UAMBA20 ALLIED III: MICROBIOLOGY –I	1. Discuss history, recent developments and microscopy. 2. Utilize techniques of sterilization, pure culture and staining. 3. Outline classification and anatomy of bacteria. 4. Compare structural characteristics of algae, fungi and protozoa. 5. Demonstrate measurement of microbial growth. 6. Explain classification of antibiotics and its mode of action.
	UAMBB20 ALLIED IV: MICROBIOLOGY – II	1. Discuss the role of microorganisms in soil and biogeochemical cycles. 2. Obtain knowledge on the potability of water and purification of municipal water supplies 3. Communicate sources of airborne pathogens and the diseases caused. 4. Outline the contamination, spoilage and preservation of food. 5. Assess the steps involved in the sewage treatment process. 6. Explain different types of fermentation and fermented microbial product.
	UAMBC20 ALLIED PRACTICAL: MICROBIOLOGY	1. Perform cleaning & sterilization of glasswares. 2. Analyze the concept of simple and differential staining method. 3. Prepare basal media for the cultivation of bacteria. 4. Assess and enumerate microorganisms present in different environment. 5. Examine the quality of milk sample. 6. Demonstrate the morphology of algae and fungi.
	UGMBA20 NON-MAJOR ELECTIVE: FOOD MICROBIOLOGY	1. Outline the scope of food microbiology 2. Acquire knowledge on the role of microorganisms in food. 3. Prepare fermented dairy products. 4. Formulate the traditional Indian fermented products. 5. Communicate the significance of food borne diseases in association with public health. 6. Explain about the genetically modified plants which are commercially available and their applications.
	UGMBB20 NON-MAJOR ELECTIVE: WASTE WATER MICROBIOLOGY	1. Use the available technologies for physical, chemical and biological treatment of municipal water. 2. Demonstrate the microbiological analysis of potable water. 3. Select appropriate treatment methods to remove certain pollutants present in wastewater. 4. Outline bioremediation of pesticides, heavy metals and oil spills. 5. Assess information about the waterborne diseases and its control. 6. Utilization of solid and liquid waste.

M.Sc Microbiology	PCMBA20: GENERAL MICROBIOLOGY	1. Outline history and recent developments of microbiology. 2. Demonstrate the principle and methods of sterilization, disinfection and their quality control 3. Utilize working mechanisms of different laboratory instruments. 4. Acquire knowledge on the sample preparation and perform various staining techniques. 5. Discuss important taxonomical aspects of bacteria, fungi, algae and virus. 6. Compile bacterial anatomy and physiology and structural properties of algae and fungi.
	PCMBB20: FOOD, AGRICULTURE AND ENVIRONMENTAL MICROBIOLOGY	1. Outline the importance of applied aspects of Microbiology 2. Analyze theprinciples in food preservation. 3. Communicate diseases associated with food. 4. Discuss the role of microorganisms in soil and microbial interaction. 5. Utilize the knowledge on biogeochemical cycles to produce biofertilizers. 6. Assess information about microbiological quality of air and water.
	PCMBC20: IMMUNOLOGY AND IMMUNOTECHNOLOGY	1. Outline the types of immune response. 2. Discuss the role of lymphoid organs in immUnity. 3. Compile immunoglobulinsand antigens. 4. Communicate the importance of MHC in organ transplantation. 5. Analyzethe allergic responses by the immune system leading to hypersensitiveconditions and auto immune disorders. 6. Plan immunization schedule.
	PEMBA20: PETROLEUM MICROBIOLOGY	1. Outline the importance of petroleum Microbiology. 2. Predict the impact of the microbial commUnities in various petroleum fields. 3. Design the microbial solutions to the microbiology related problems in the petroleum industry. 4. Discuss solutions to enhance production of oil/energy by applying concepts of production related petroleum microbiology. 5. Utilize biotechnological aspects in remediation of oil spills. 6. Use apparatus for the detection of living microbial contaminants in petroleum products.
	PEMBB20: ECONOMIC	1. Outline the importance of Economic Microbiology. 2. Utilize microorganisms as biofertilizers and for vermicomposting.

	MICROBIOLOGY	3. Analyze microbial cells as fermented products. 4. Use yeast in and as food and feed. 5. Demonstrate mushroom cultivation and its storage. 6. Discuss biotechnological applications of microalgae.
	PCMBF20: MEDICAL MICROBIOLOGY	1. Outline the basics of Medical Microbiology. 2. Describe the mode of transmission of various pathogens. 3. Analyze pathogenic microorganism and its mechanism of pathogenesis. 4. Select methods to identify the causative agents for clinical diagnosis. 5. Discussin depth information on epidemiology and its preventive measures. 6. Compile virus structure, multiplication, classification and medical importance.
	PCMBG20: MICROBIAL PHYSIOLOGY AND BIOMOLECULES	1. Explain microbial metabolism, growth and energy generation. 2. Analyze microbial physiology, different classes of antimicrobial agents and their mode of action. 3. Evaluate the properties of carbohydrates in metabolism. 4. Discuss the structure and function of DNA and RNA. 5. Compile the process involved in synthesis of nucleic acid. 6. Outline the steps involved in post transcriptional and translational modification
	PCMBH20: INDUSTRIAL AND PHARMACEUTICAL MICROBIOLOGY	1. Outline the importance of production strain in industries 2. Discuss fermentors and fermentation process. 3. Describe the upstream and downstream processing. 4. Analyze the steps involved in vaccine, toxoid and antisera production 5. Evaluate the standardization of antiseptics and disinfectants. 6. Assess good practice and regulation involved in utilizing microbial product for pharmaceutical applications.
	PEMBC20: BIOLOGICAL TECHNIQUES	1. Outline the importance of safe laboratory practices. 2. Discuss about various microscopes, its parts and their working mechanism. 3. Apply the principle and usage of spectroscopic, centrifugation, biosensors and radioactive analysis. 4. Analyse principles and applications of chromatographic techniques. 5. Demonstrate principles and applications of electrophoresis. 6. Compile the techniques involved in molecular biology.
	ELECTIVE II-B PEMBD20:	1. Outline the anatomy of human body.

	HUMAN ANATOMY AND PHYSIOLOGY	2. Discuss protective mechanism of respiratory system and sensory organs. 3. Explain the role of gastrointestinal system and lympho - reticular system. 4. Identify the major components of musculoskeletal and nervous system. 5. Analyse the production of RBC, compare the role and function of endocrine system. 6. Revise the anatomical differences between male and female reproductive and urinary system.
	PCMBD20: MAIN PRACTICAL –I: APPLIED MICROBIOLOGY AND IMMUNOLOGY	1. Identify morphology of bacteria using different staining procedure and isolating them by pure culture techniques. 2. Assess the quality of air, water and soil samples. 3. Analyse microbiological quality of different foods. 4. Examine the activity of extracellular enzymes 5. Apply agglutination and precipitation methods to detect antigen and antibody. 6. Select appropriate chromatographic methods to separate aminoacids, pigments and from crude extracts
	PCMBE20: MAIN PRACTICAL – II: MEDICAL MICROBIOLOGY	1. Demonstrate collection, transport and processing of clinical specimens. 2. Identify the bacterial pathogens from various clinical samples. 3. Detect the antimicrobial activity. 4. Analyse the clinical specimens for the examination and cultivation of pathogenic fungi. 5. Estimate worm burden stool for the identification of parasite. 6. Enumerate blood cells.
	PIMBA20: IEC- I: PUBLIC HEALTH MICROBIOLOGY	1. Explain the significance of public health. 2. Communicate the mode of transmission of human diseases. 3. Discuss the role of air borne pathogens and the disease caused. 4. Analyse the food borne pathogens and food borne illnesses. 5. Outline the vector complex interactions between the pathogens and host. 6. Create awareness on hospital-acquired infections, prevention and its control measures.
	PIMBB20: IEC-II: ANIMAL TISSUE CULTURE	1. Introduce the importance of cell culture. 2. Demonstrate knowledge of cell lines used in tissue culture, their origins and

		applications. 3. Explain major components of cell and tissue culture media. 4. Identify methods to maintain cultures of animal cells and established cell lines with good viability and minimal contamination. 5. Utilize hybridoma technology for monoclonal and polyclonal antibodies production. 6. Outline the applications of animal cell culture.
	PIMBC20: IEC –III: HAEMATOLOGY AND BLOOD BANKING	1. Outline the ABO blood grouping and Rh typing. 2. Apply techniques to collect and store blood samples. 3. Describe the composition of blood. 4. Discuss of various blood disorders. 5. Perform routine haematological tests. 6. Elaborate the clinical significance of blood transfusion
	PIMBD20: IEC -IV: FORENSIC SCIENCE	1. Outline the history, scope and development of forensic science. 2. Elaborate the development of forensic science in India. 3. Evaluate the methods underpinning forensic science, from crime scene investigation to report evidential value within a case. 4. Reflect on the use of various divisions of forensic science in the crime investigation. 5. Explain the theory of DNA fingerprints, blood pattern analysis, footwear and tool mark impression evidence, and drugs of abuse in the context of Forensic Science. 6. Utilize psychological principles in crime investigation.
	PCMBI20: MOLECULAR BIOLOGY AND MICROBIAL GENETICS	1. Outline the identification of DNA as genetic material. 2. Discuss molecular mechanisms underlying mutations. 3. Explain the concepts of gene transfer mechanism in prokaryotes and eukaryotes. 4. Identify the role of plasmids as cloning vectors. 5. Evaluate on the role of transposable elements with gene mapping. 6. Analyze the control methods for gene expression.
	PCMBJ20: ADVANCED MICROBIOLOGY	1. Utilize microorganisms in the preparation of cosmetics. 2. Evaluate the biological potential in samples return from satellites and solar system. 3. Discuss the role of antimicrobial fabrics, carpets, tiles and colorants. 4. Produce bacteriostatic sanitary napkins and towels. 5. Comprehend on paper, rubber and plastic Microbiology 6. Analyze the methods for producing the antimicrobial products.

	PCMBK20: RESEARCH METHODOLOGY	1. Outline the importance of research. 2. Explain basic concepts of research and its methodologies 3. Identify the relationship between methodology, framework and data collection. 4. Analyze the diverse cases using statistical methods. 5. Use of digital library as a resource of microbiological research. 6. Discuss the principles and algorithms of pairwise and multiple alignments, and sequence database searching.
	PEMBE20: ELECTIVE-IIIA: BIOINOCULANTS TECHNOLOGY	1. Outline the importance of bioinoculant technology. 2. Discuss the role and significance of biofertilizers. 3. Demonstrate the mass production and applications of bio fertilizer and their impact on plant growth. 4. Identify in-depth information on the mycorrhizal taxonomy, occurrence and distribution. 5. Explain the types of mycorrhizal associations and quantification. 6. Formulate the growth of phosphate solubilizing microbes.
	PEMBF20: ELECTIVE III-B: FUNGAL BIOTECHNOLOGY AND BIOPROSPECTING	1. Overview the fungal diversity. 2. Perform screening and strain development for production of different bio-molecules. 3. Design a bioreactor with special emphasis on fungal systems. 4. Comprehend about different secondary metabolites of fungal origin 5. Demonstrate methods of recombinant technology with special emphasis on fungal system. 6. Explain the role of fungi in food and feed industries.
	PCMBN20: MICROBIAL GENE TECHNOLOGY	1. Outline the importance of Microbial gene technology. 2. Analyze the various techniques involved in identification and quantification of nucleic acids. 3. Utilize the tools and techniques of genetic engineering and the role of DNA manipulative enzymes. 4. Compile DNA sequencing methods. 5. Explain about genomic libraries and artificial chromosomes. 6. Discuss the modern tools and techniques of genomics and application of antisense technologies.

	PCMBO20 : BIOETHICS AND BIOSAFETY	1. Outline the principles of bioethics. 2. Explain the biosafety concerns and safeguard measures. 3. Compile the BSA statement for the industrial production of pharmaceuticals. 4. Adapt the WHO quality standards in food process technology. 5. Discuss on the global scenario of patenting.
	PCMBL20: MAIN PRACTICAL –III: GENETIC ENGINEERING	1. Evaluate the importance of advance skills in genetic engineering with ethical standards. 2. Utilize technical skills in isolation of DNA, their quantification and plasmid. 3. Analyse gene transfer mechanism and protein. 4. Use the basic skill on blotting techniques & PCR. 5. Select methods for the immobilization of enzymes. 6. Demonstrate the process of induction of mutation.
	PCMBM20: MAIN PRACTICAL –IV: TEXTILE AND COSMETIC MICROBIOLOGY	1. Utilize the techniques for decolourization of textile industrial waste. 2. Estimate of BOD, COD and total solids in effluent sample. 3. Demonstrate the antimicrobial activity of textile materials. 4. Evaluate the antifungal property of treated textile materials. 5. Analyse the microbiological quality of cosmetics. 6. Enumerate microorganisms in cosmetics, perfumes and essential oils.
	PIMBE20: IEC-V: ENTREPRENEURSHIP AND MANAGEMENT IN MICROBIAL TECHNOLOGY	1. Outline the skills required for a successful entrepreneur. 2. Acquaint basic concepts of management such as planning, decision making, leadership, organization and authority. 3. Compile the motivational theories. 4. Explain the concepts of centralization and decentralization. 5. Discuss on IPR and Bioethics with an understanding of government policies. 6. Attain skill to manage start up and run an organization
	PCMBF20: IEC-VI: CYANOBACTERIOLOGY	1. Outline the diversity of cyanobacteria. 2. Discuss on the genomics of Cyanobacteria 3. Explain the molecular biology of Cyanobacteria 4. Describe the molecular regulation in Cyanobacteria. 5. Demonstrate the mass cultivation of Cyanobacteria.

		6. Comprehend the applications of Cyanobacteria
B.Sc. Visual Communication	UCVCA20 INTRODUCTION TO VISUAL COMMUNICATION	1. Indicating the Basic Concepts of Communication. 2. Analyzing the concepts of Visual cues and Visual Theories. 3. Acquiring an in-depth knowledge in Visual Analysis and Visual Stereotypes 4. Identifying the Essential aspects of Visual Language. 5. Exploring the insights of Visuals in Media.
	UCVEB20 PRACTICAL - 1 - DRAWING AND DESIGN	1. Classifying the Basic Drawing Skills 2. Acquiring Knowledge about Geometrical Shapes, Alphabets and Numbers and create Still life. 3. Applying the Perspective Techniques in outdoor sketching using appropriate Lights and Shades 4. Practicing Colors Using Watercolor and Poster colors. 5. Implementing the Techniques to create Animals Birds and Human Forms.
	UAHCA20 ALLIED - I HUMAN COMMUNICATION	1. Restating the Basic Concepts of Communication. 2. Acquiring Knowledge about the Barriers of Communication. 3. Describing the Various types of Verbal and Non Verbal Communication. 4. Acquiring in depth knowledge in Inter personal and Intra Personal communication. 5. Applying the Communication Skills in Public Speaking.
	UCVCC20 PAPER II -BASIC PHOTOGRAPHY	1. Explaining the key elements of photography and its evolution. 2. Analyzing the compositional techniques and exposure controls. 3. Acquiring an in-depth knowledge about the characteristics of light, color and various lighting setup. 4. Categorizing about types of camera, lens and digital image processing. 5. Apply and practice the photography techniques in a practical way.
	UCVCD20 PRACTICAL – III – PROFESSIONAL PHOTOGRAPHY	1. Discussing the various parts and functions of the camera. 2. Acquiring knowledge in lighting and exposure techniques 3. Applying composition skills. 4. Utilizing the various filters and lenses. 5. Creating various genres of photography.
	UABAA20 - ALLIED – II BASICS IN ADVERTISING	1. Discussing the basic concepts of advertising and its history. 2. Acquiring basic knowledge about advertising media. 3. Analyzing the process of layout designing for an advertisement. 4. Evaluate the impact of advertisement on society. 5. Creating an advertisement for print, radio and television.

	USCMA120/ USCMA220 BASIC DRAWING	1. Classifying the Basic Drawing Skills. 2. Acquiring Knowledge about Geometrical Shapes, alphabets and Numbers to create Still life. 3. Identifying the concept of angles of Lighting and Shading. 4. Applying the Perspective Techniques in outdoor sketching using appropriate Lights and Shades. 5. Practicing the Design and patterns in the form of Zen tangle Art.
	UCVCE20 - TELEVISION PRODUCTION	1. Describing the phases and development of television production. 2. Acquire an in-depth knowledge about preproduction stages of television production. 3. Explaining the camera operation techniques and implementation. 4. Analyze the lighting techniques and production management. 5. Acquire a profound knowledge in post-production techniques.
	UCVCF20 - COMPUTER GRAPHICS	1. Explaining the Tools and Techniques of Adobe Photoshop. 2. Applying the knowledge of the tool in designing logos, visiting cards and letter head. 3. Creating print advertisements like brochures, pamphlet, banners and magazine with the usage of proper techniques. 4. Applying the techniques effectively to create personalizes greeting cards and Cd covers 5. Compiling and implementing all the techniques learnt, to create image manipulation.
	UASWA20 - SCRIPT WRITING	1. Describing the basic concepts of script preparation and its models. 2. Analyze the dramatic structure and forms of script writing. 3. Learning the various forms of writing for visual mediums. 4. Draw the basic writing elements of radio production. 5. Apply and evaluate the writing skills.
	USCMC320 - SKILLED BASED ELECTIVE – III ART OF STORY BOARD	1. Discussing the planning processes of visual storytelling. 2. Sketching the art of story boarding process 3. Experimenting the field view shorts and angle 4. Explore the basic storyboard techniques. 5. Creating the storyboard with the learned technique.
	UCVCG20 MEDIA, CULTURE AND SOCIETY	1. Report and Restate the elements of society and its theories. 2. Illustrate the characteristics of culture and its models. 3. Analyze the various models of media and Categories the ecological perspective of media audience

		4. Analyze the various models of media. 5. Evaluate the social issues of media.
	UCVCH20 POST PRODUCTION EDITING	The Learners will be able to 1. Explaining the various tools and workspace of adobe premiere pro. 2. Using various effects and techniques. 3. Applying the titling and adding sound effects 4. Creative synchronization of song and scene remix 5. Create a short film or documentary using editing techniques.
	UAJLA20 JOURNALISM	1. Explaining the basic concepts of journalism. 2. Analyzing the newspaper organization and its ethical codes. 3. Evaluating the role of journalist in the stream of electronic media. 4. Classifying the duties and responsibilities of Television journalist. 5. Acquiring the Knowledge and process of online journalism.
	USCMD420 INTRODUCTION TO ART DIRECTION	1. Explaining the basic concepts of art direction. 2. Analyzing the various works of the prominent art directors. 3. Acquiring in-depth knowledge about the creation of set models. 4. Compiling the technical aspects of set direction. 5. Acquiring the stage management skills.
	UCVCI20 MEDIA RESEARCH	1. Restating the Types and Characteristic of Research. 2. Analyzing the Research Process. 3. Acquiring an in depth Knowledge in Sampling Techniques. 4. Discussing the Qualitative and Quantitative Research Methods. 5. Acquiring Knowledge in Data Analysis and Presentation.
	UCVCJ20 ELEMENTS OF FILM	1. Identifying the concepts of Film as a Mass medium and its Production Stages. 2. Acquire an In-depth knowledge in Film Language. 3. Analyze about origin of Indian Cinema. 4. Exploring the Film making Techniques in World Cinema 5. Distinguish the Film genres.
	UCVCK20 DIGITAL PUBLIC RELATIONS	1. Summarize the Concepts and Scope of Public Relations in different sectors. 2. Evaluating the Process of PR and acquiring the profound knowledge in Public relation writing. 3. Analyzing the corporate, social and ethical Responsibilities of PR. 4. Examine the different roles of Digital PR 5. Preparing and presenting a PR campaign on social issues
	UCVCO20	1. Explaining the Concept of Media Laws and Rights

	MEDIA LAWS, AND ETHICS	2. Reviewing Various Media Acts and its uses. 3. Acquire an in depth Knowledge in Media Laws. 4. Analyzing the Cyber Laws and Regulations. 5. Examine the Media Regulatory Authority Bodies.
	UCVCP20 INTRODUCTION TO ICT AND NEW MEDIA	1. Identifying the Concept of Internet and its Features. 2. Acquiring the Knowledge in Usage of ICT in Print Media. 3. Applying the Techniques of ICT in Electronic Media. 4. Implementing the ICT tools and techniques in New Media. 5. Analyzing the Connectivity issues in New Media.
	UCVCQ20 WEB DESIGNING	1. Acquiring the Basic Knowledge about Adobe Dreamweaver. 2. Locating the Various Tags used for Creating web pages. 3. Designing the Navigation Structure for Web Pages. 4. Creating the Webpage and Making Links. 5. Adding Various Effects to Web Pages
	UEVCA20 ELECTIVE II A: E_CONTENT DEVELOPMENT	1. Explain the basic concepts of E-content 2. Analyzing the types and models of E-content 3. Acquiring the knowledge and presentation on E-content. 4. Evaluating the E-learning platforms and technologies 5. Executing and publishing the E-contents for formal education
	UEVCB20 ELECTIVE II B: MEDIA MANAGEMENT	1. Discussing the Concepts of Management Principles. 2. Acquiring the knowledge in Structure of News Media Companies. 3. Utilizing the Internet in the Electronic Media Management 4. Applying the Ethical Codes effectively in the Media Management. 5. Evaluating the Ownership Patterns of Electronic Media Management.
	UCVCR20 SHORT FILM PRODUCTION	1. Identifying the Concepts of Short film production. 2. Implementing the Pre-Production process of Short film. 3. Executing the Production process of short film. 4. Compile the Post Production Activities according to the Script. Presenting the Documentation with Master Copy
	USCMD620 DIGITAL PUBLISHING	1. Select the Various Type Faces. 2. Acquiring the Knowledge in the process of Printing. 3. Analyzing the Substrates used for Printing. 4. Acquiring the Knowledge in final Printing Process. 5. Implementing the Creative ideas in Printing Process.
	UGCMA620	1. Restate the concepts of democratic media and its rights.

	DEMOCRACY & MEDIA	2. Analyzing the capitalized Media and its Business. 3. Examine the policy of the Democratic Media 4. Discover the emergency of digital news platforms 5. To find the relationship between the social media alternative media & democracy.
	UGCMB620 ADVERTISING	1. Describing the basic concepts of advertising and its history. 2. Acquiring basic knowledge about advertising Concepts. 3. Analyzing the process of layout designing for an advertisement. 4. Evaluate the impact of advertisement on society. 5. Implementing the advertisement concept for print, radio and television
M.Sc. Electronic Media	PCEMA20 MASS COMMUNICATION AND JOURNALISM	1. Review the Basics of Communication and Mass Culture. 2. Analyze and Understand the Western Models and Theories of Communication. 3. Acquiring Knowledge about the inception of Journalism. 4. Analyze the Journalistic Values and Various News Paper Organizations. 5. Evaluate the Concept of Journalistic Writing and Editing.
	PCEMB20 BROADCASTING IN INDIA	1. Identify the Inception of Radio and Development of Radio in India. 2. Analyze the Evaluation of Television and its Development Process in India 3. Evaluate the Various formats and genres of Radio. 4. Compile the Various formats and genres of Television. 5. Examine the Broadcast Regulations and Convergence of Media.
	PCEMC20 - VIDEOGRAPHY	1. Describe the Basic Parts and Functions of the Video camera. 2. Analyze the Characteristic of Lighting and Lighting techniques. 3. Acquiring Knowledge in Camera Composition Techniques and concepts of Color. 4. Evaluate the Camera Operation and Lighting Techniques in Indoor Production. 5. Elaborate Various Recording and Storage Formats of Videos.
	PCEMD20 - PRACTICAL – I: VIDEO PRODUCTION	1. Classify the various parts and function of the video camera. 2. Acquiring and applying knowledge in shots, angles and camera movements. 3. Applying the lighting and composition techniques. 4. Examine the montage recording techniques. 5. Creating the short film using proper camera techniques.
	PCEME20 - PRACTICAL – II: WRITING FOR BROADCAST MEDIA	1. The Learners will be able to 2. Explain the basic writing skills for Broadcast Media. 3. Creating the Advertisement, promo and PSA for Radio. 4. Creating the Advertisement, PSA for Television medium. 5. Design the Drama for the radio medium 6. Compile News Releases for the radio and Television medium.

	PEEMA20 - ELECTIVE – I A: SCRIPT WRITING AND DIRECTION	1. Restate the basics of script and script writing process. 2. Analysing the various scripts formats for fiction and nonfiction programs. 3. Evaluating the role of director from preproduction to post production. 4. Acquiring in depth knowledge about the production stage and its related activities 5. Analysing the various methods and techniques in direction
	PEEMB20 ELECTIVE – I B: BROADCAST JOURNALISM	1. Discussing the basic concepts of Journalism. 2. Analysing the ethical codes and ethical standards of journalism in the contemporary media. 3. Acquiring in depth knowledge in television news process. 4. Adapting the techniques of news writing process for a radio medium. Evaluating the legal aspects and procedures of launching the Broadcast news channel
	PCEMF20 ADVANCED TELEVISION PRODUCTION	1. Describing the basics of Television production and its standard formats. 2. Acquiring the knowledge on Production management and production elements. 3. Examine the basic work process in the preproduction stage. 4. Analysing the production process and production techniques. 5. Adopting the post production process and its techniques
	PCEMG20 RADIO PRODUCTION	1. Review the basic sound principles and psychophysics of sound. 2. Evaluating the uses of sound equipment's and production of multichannel sounds. 3. Acquiring the knowledge on Acoustical requirement of ideal studio. 4. Analysing on the types of special audience programming on radio 5. Examine the innovative developments in radio communication.
	PCEMH20 MEDIA ANALYSIS AND TECHNIQUES	1. Explain the Semiotic Analysis of Media. 2. Acquiring Knowledge about Marxist Analysis 3. Analysing the Psychoanalytic Criticism. 4. Evaluating the Feminist Analysis. 5. Examine the Concept of Media Ethics and Laws.
	PCEMI20 PRACTICAL III: NON LINEAR EDITING	1. Identify the Final Cut Pro Tools and Techniques. 2. Acquiring Knowledge about the Radio Programming. 3. Elaborating the Key features of News Production. 4. Creating the titling and end credits and Dubbing for Video Production. 5. Develop the various formats of Programme Production.
	PCEMJ20 PRACTICAL IV: PROJECT WORK	1. Analysing the Concepts of Documentary/Short film production 2. Implementing the Pre-Production process of Documentary/short film 3. Executing the Production process of Documentary/short film 4. Compile the Post Production Activities according to the Script.

		5. Creating the Documentation with Master Copy.
	PEEMC20 ELECTIVE II A: INTER-CULTURAL COMMUNICATION	1. Discuss the Concept of Inter Culture Communication. 2. Acquiring Knowledge in the aspects of inter cultural Business Communication. 3. Analysing the Concepts of Intra Cultural Communication. 4. Acquiring the Knowledge about Global Communication 5. Evaluating the Relationship between Intercultural Communications in News Media Production.
	PEEMD20 ELECTIVE II B: MOBILE COMMUNICATION	1. Explain the concepts of Wireless communication. 2. Analysing the work process of Analog and digital signal transmission. 3. Explain the components of radio system and radio frequency. 4. Evaluating the various kinds of wireless network and its uses. 5. Analysing the advantages and challenges of wireless communication.
	PCEMK20 FILM STUDIES	1. Classify the inception of world cinema and history of Indian cinema. 2. Analysing the concept of film as an art and characteristics of films. 3. Acquiring the knowledge on various concepts of film theories. 4. Making an in-depth analysis on Genres of cinema. 5. Elaborate the recent trends in film industry.
	PCEML20 COMMUNICATION RESEARCH METHODS	1. Explain the basic concepts of research and research process. 2. Assessing the concepts of qualitative and quantitative research. 3. Making an in-depth analysis on sampling methods and sampling techniques. 4. Analysing the various statistics methods and Analysis. 5. Acquiring the knowledge on research report writing and presentation.
	PCEMM20 PUBLIC RELATIONS AND CORPORATE COMMUNICATION	1. Review the concepts of public relations and different models of PR. 2. Evaluating the functions of PR and PR Writing. 3. Analysing the role of PR in press and other media relations. 4. Acquiring the knowledge on corporate communication. 5. Elaborate the PR profession and PR in the digital Era.
	PCEMN20 PRACTICAL – V: INTERNSHIP	1. Discuss the concepts of production house in Television Medium. 2. Acquiring an in-depth knowledge in the Respective Media Industry. 3. Compiling the Types of Work done in the Production house. 4. Evaluating the Experience gained in Production house. 5. Substantiate the Report with proper documents.
	PCEMO20 - PRACTICAL – VI: BASIC 3D GRAPHICS	1. Locating the Various tools and workspace of 3D Studio Max. 2. Acquiring the knowledge in basic Animation Techniques.

	AND ANIMATION	3. Analyze and usage of Character Animation Techniques. 4. Creating a Product and Architecture Design. 5. Compile the Concept of Lighting and Camera effect in 3d Animation.
	PEEME20 - ELECTIVE III A: TECHNICAL BUSINESS COMMUNICATION	1. Describe the concepts of Business communication. 2. Analysing the theories of organizational group communication. 3. Assessing the importance of business correspondence and the writing skills. 4. Applying and presenting the visual aids in oral presentation. 5. Evaluating the ethics and business communication in the global context.
	PEEMF20 - ELECTIVE IV B: ADVERTISING IN VISUAL MEDIA	1. Identify the basic purpose and functions of Advertising. 2. Analysing the economic and social issues in advertising. 3. Elaborating about Advertising in marketing mix and process. 4. Acquiring the knowledge on advertising strategy planning. 5. Making and presenting of print and radio Ads.
	PCEMP20 - ELECTRONIC MEDIA MANAGEMENT	1. Explain the basic responsibilities of media and journalism. 2. Analysing theories and modern approaches to Management. 3. Acquiring the knowledge about Human Resources Management. 4. Evaluating the Marketing strategies of Media Management. 5. Formulating the Programme budget process of Television and radio
	PCEMQ20 - DEVELOPMENT COMMUNICATION	1. Review the various approaches for Development communication. 2. Analysing the Development communication in the global perspectives. 3. Acquiring the knowledge about the key concepts in development communication. 4. Assessing the policies of government on development perspectives. 5. Evaluating the role communication and empowerment strategies for development communication.
	PCEMR20 - ADVERTISING &INTERGRATED MARKETING COMMUNICATION	1. Discuss the inception of advertising and its benefits. 2. Analysing the Branding and market segmentation of advertisement. 3. Examining the advertising agencies and Elements of Ad layout. 4. Compiling the concepts of integrated marketing communication. 5. Evaluating the concepts of Corporate advertising.
	PCEMS20 - PRACTICAL – VII: RESEARCH PROJECT	1. Describe the Basic concepts of Qualitative and Quantitative Research Methods. 2. Analysing the topic and choosing the topic related to their rate of interest. 3. Evaluating the Research and choosing the desired methodology for conducting research. 4. Compiling the data collected and pointing the Key findings.

		5. Constructing the desired conclusion and writing the Research Report.
	PCEMT20 - PRACTICAL – VIII: WEB PUBLISHING	1. Acquiring the Basic Knowledge about Adobe Dreamweaver. 2. Locating the Various Tags used for creating web pages. 3. Designing the Navigation structure for Web Pages. 4. Creating the Webpages and Making Links. 5. Compose Various Effects and transitions to Webpages.
	PEEMG20 - ELECTIVE IV A: WEB DESIGNING	1. Review the concepts of web Design and Web browsers. 2. Acquiring knowledge about Dreamweaver and making Hyperlinks. 3. Analysing the HTML Tags and its Attributes. 4. Evaluating the Concept for planning the Website. 5. Constructing the Webpages by using Cascading Style sheet and preview it in Browsers.
	PEEMH20 - ELECTIVE IV B: WOMEN AND MEDIA	1. Discuss the Concept of Portrayal of women in Media. 2. Analysing the concept of Media for Development. 3. Examining the portrayal of women in Media 4. Acquiring Knowledge about Development of women in Media. 5. Evaluating the role of Women in Media.
	PIEMA20 - INDEPENDENT ELECTIVE-RADIO & TELEVISION NEWSCASTING	1. Identify the basic radio production fundamentals and radio programming formats 2. Analysing the structure of news story and its presentation methods 3. Evaluating the components of television news and the role of Media professionals 4. Acquiring the knowledge about requirements for news production 5. Elaborating the role of news production teams and risk management in news casting
	PIEMB20 - INDEPENDENT ELECTIVE-ELECTRONIC JOURNALISM	1. Indicating the origin and development of electronic journalism 2. Analysing the concept of radio news production and its genres 3. Applying the concept of television news production techniques and live news 4. Elaborating the features and development of online journalism Compiling the technologies used for electronic journalism
	PIEMC20 - INDEPENDENT ELCTIVE -WOMEN AND ADVERTISING	1. Describing the role of women in Advertising 2. Analysing the portrayal of women in advertising 3. Evaluating the ethical codes of advertising 4. Exploring on the women entrepreneurship in India 5. Compiling the notable emerging women leaders in Advertising
	PIEMD20 - INDEPENDENT ELECTIVE-INTERNATIONAL	1. Explain the concept of international communication and balanced information flow 2. Analysing the approaches and theories related to international communication 3. Exploring about the international media organization

	COMMUNICATION	4. Evaluating the concept of disappearing borders of empowerment 5. Identifying the key figures of international communication
B.B.A	UCBAA20 Principles of Management	1. Acquire the knowledge related to management concepts and its principles 2. Have the knowledge about planning, decision making and its types 3. Be able to know about planning, decision making and its types 4. Have knowledge regarding organising, authority and delegation 5. Acquire the knowledge related to coordination and controlling
	UCBAB20 Business Mathematics and Statistics - I	1. Apply the concept of matrices in solving business problems. 2. Analyse and demonstrate differentiation skills in economics and business. 3. Apply graphical methods to interpret statistical data. 4. Apply the statistical techniques in business. 5. Solve a range of problems using the techniques covered.
	UABUA20 Business Communication	1. Obtain the basic knowledge and importance of Communication 2. Learn the components of a Business Letter and draft various kinds of Business Letters 3. Be able to draft Bank Correspondence and Government Correspondence 4. Write Business Reports and learns the internal communication systems Familiarize in Technology aided Business Communication
	UCBAC20 Organizational Behaviour	1. Equipped with the fundamental concept of Organizational Behaviour 2. Acquire the knowledge concept of individual dimensional behaviour of the individuals 3. Assess the attitudinal and motivational behaviour and group dynamics of an individual 4. Understand the concept of leadership, conflict and stress level of the individuals 5. Acquire the knowledge about the organizational Change, Climate and Culture & MBO
	UCBAD20 - Business Mathematics and Statistics – II	1. Understand mathematical applications in finance. 2. Demonstrate mathematical skills like integration required in economics and business. 3. Comprehend critical thinking and problem-solving skills in correlation and regression. 4. Interpret numerical information that forms the basis of index numbers in business. 5. Analyze the theoretical concepts, tools and methods of probability.
	UABEA20 – Business Environment and Ethics	1. Understand the Business environment 2. Be able to inter-relate the political and legal environment in business 3. Relate the importance of economic and financial environment to business

		4. Comprehend the vitality of Privatization, Globalization and Liberalization in the business 5. Recognize the importance of business ethics and social responsibility in today's business
	UCBAE20 – Marketing Management	1. Confident enough to demonstrate the bases of fundamentals of marketing and marketing mix 2. Potentially strong in segmenting the markets based on the behavior of consumers 3. Able to identify the various types of goods and gain knowledge about the product and its features 4. Attain the knowledge of the promotion and distribution strategies 5. Adopt the optimum marketing distribution channel and salesmanship criteria
	UCBAF20 – Financial Accounting	1. Acquire in-depth knowledge in Accounting 2. Absorb good conceptual knowledge in Accountancy 3. Be able to prepare accounts and trying out the final result of the business 4. Be capable of becoming accountant in any business organization. 5. Be capable of becoming accountant in any non trading concern
	UAMEA20 – Managerial Economics	1. Have depth knowledge in the basics of Managerial Economics 2. Understand the choices made by a rational consumer with basic concepts of Demand and its Equilibrium 3. Attain proficiency in the Supply concepts and the cost function 4. Acquire knowledge in the production function and pricing strategies 5. Identify the key characteristics and consequences of different forms of market competition
	UCBAG20 Operations Research - I	1. Understand and solve linear programming problems. 2. Identify and develop the operational research models such as graphical and simplex method. 3. Comprehend advanced linear programming problems using Big M method. 4. Construct and solve transportation models and assignment models. 5. Analyze and evaluate assignment models.
	UEBAA20 International Business	1. Aware of concepts of globalization, domestic & international trade 2. Attain knowledge in the various types of International Business Environment 3. Gain in-depth knowledge about Multi-national Corporation 4. Acquire knowledge about FDI and also about Institutional support to International Business

		5. Familiarize in various International Economic Institutions and social responsibility and ethical issues in international business
	UEBAB20 Logistics and Supply Chain Management	1. Aware of the basic concepts of logistics and its types 2. Learn about the logistics decision, logistics planning and logistics cost 3. Develop an understanding of Supply Chain Management, Supply Chain Software 4. Gain knowledge about inventory, warehousing and Supply Chain Interface 5. Be enriched about the activities involved in distribution network planning and Integrated Supply Chain Management
	USBAC320/USBAC420 Hospital Planning and Administration	1. Understand and attain knowledge in the planning of Modern Hospital 2. Be familiarized with Organization Structure and Medical Records of a Hospital 3. Identify the importance of Hospital Waste Management 4. Understand the Customer Experience Management 5. Acquire adequate knowledge about Clinical Support Services in Hospitals
	UCBAH20 Cost and Management Accounting	1. Gain knowledge on the concepts of management and cost accounting techniques 2. Be equipped with the knowledge for preparation of cost sheet ,valuation of stock, pricing of material issues and prepare accounting for stage wise production under different process 3. Be capable of preparing, analysis and interpreting financial statements using various tools 4. Gain knowledge how to prepare fund flow statement and cash flow statement and using the same for decision making in business 5. Be able to make decisions in the form of preparing budgets and price fixation
	UCBAJ20– Research Methodology	1. Know the general definition of research and qualities of research 2. Be able to distinguish the research design and to conduct statistical test of a hypothesis 3. Define the sampling design on the basis of the data 4. Understand the types of data collection and to use it for their study based on the requirement 5. Be able to write report and do statistical analysis using software packages
	UCBAK20– Human Resource Management and Development	1. Integrate the knowledge of HR concepts and role of HR in the organisation 2. Attain the knowledge of the various HR functions and its importance 3. Develop deep insight into the concepts of managing talents in the organisation 4. Understand welfare and safety measures and its importance for the employees

		5. Understand the importance of HR audit, HR ethics and challenges ahead of HRM
	UCBAI20 –Operations Research - II	1. Utilize the concepts of Operation research in real life experiments. 2. Plan the Sequencing of jobs through machines. 3. Evaluate the critical path and project duration in CPM. 4. Compute the Probability of meeting the scheduled dates in PERT. 5. Compare CPM and PERT. 6. Acquire the solutions for Game of two players in Game theory. 7. Analyze the queuing theory for single channel problems.
	USBAD320/USBAD420 – Hotel Planning and Administration	1. Understand the concepts in Hotel Planning and Administration 2. Acquire the acquaintance of Front Office and its operations 3. Gain knowledge on Housekeeping department and its operations 4. Understand the functions of control Desk and cleaning routines in hotel 5. Obtain knowledge on Horticulture and landscaping in the hotel management
	UCBAL20 – Financial Management	1. Be well-versed in the financial decision, functions and organisation of financial managements 2. Come out with the practical knowledge of evaluating capital investment using traditional and modern capital budgeting methods 3. Gain practical knowledge in calculating cost of different capitals 4. Acquire knowledge over capital structure and work out capital structure under different approaches 5. Gain both theoretical and practical knowledge on working capital management and Inventory management
	UCBAM20 – Industrial Relations	1. Understand the concept & meaning of Industrial Relations and The Payment of Wages Act, 1936 2. Acquire knowledge about The Factories Act, 1947 3. Analyse and understand the concept of The Maternity Benefit Act, 1961 4. Attain knowledge of The Industrial Dispute Act, 1947 5. Be able to absorb the concept of The Employees State Insurance Act, 1948 & The Minimum Wages Act 1948
	UCBAN20 Banking and Insurance	1. Gain knowledge on banking system and its services 2. Equip with the knowledge of RBI and its functions and importance of negotiable instruments 3. Gain the knowledge as to how to open and operate accounts in bank and also

		maintaining relationship with bankers 4. Understand the meaning of the insurance and its necessary principles 5. Gain knowledge over different types of insurance, their applicability and benefits
	UCBAO520 Fundamentals of Information Technology and System	1. Well-versed in the basics of information system and technology 2. Understand programming languages to coordinate the operative and management functions 3. Equip with the practical knowledge of information technologies and implement in their organisation 4. Acquire knowledge over the basic concepts of information systems and can implement in their organisation 5. Gain knowledge on all the management functions inculcating with IS and IT
	USBAE520/USBAE620 Campus to Corporate	1. Gain understanding and practice of attitude, behaviour and skills required in the corporate environment 2. Complete a professional resume that highlights their skills specific to their career field 3. Build a solid foundation to face interviews 4. Proactively manage the transition from being the student to the employee 5. Deliver best at group discussions
	UCBAS20 Legal Aspects of Business	1. Be thorough in the contractual relationships in business 2. Understand the Indian contract act, 1872 and discuss legal remedies in case of breach of a certain contract 3. Apply basic legal knowledge to business transaction especially in sale and resale agreement 4. Gain knowledge in the regulatory framework of companies in India 5. Acquire knowledge on partnership and registration of firms.
	UCBAT20 Production & Materials Management	1. Understand the concepts of production management, plant location and plant layout 2. Acquire knowledge on production planning and control, production scheduling and Maintenance management 3. Be aware of maintaining quality of products, six sigma, work study, method study and work measurement 4. Understand the concepts and techniques in materials management, purchase management, stores management, materials handling and codification of materials 5. Be familiarized about inventory control techniques and ISO certification
	UEBAC20	1. Evaluate the principles of quality management and to explain how these principles

	Total Quality Management	can be applied within quality management systems 2. Identify the key aspects of the quality improvement cycle and to select and use appropriate tools and techniques for controlling, improving and measuring quality 3. Critically appraise the organizational, communication and teamwork requirements for effective quality management 4. Know the concept of benchmarking and total productive maintenance in the organization 5. Identify key challenges in implementing TQM and maintain standardization
	UEBAD20 Entrepreneurial Development	1. Have the ability to discern entrepreneurial traits 2. Know the different entrepreneur and supporting institution and Write a business plan 3. Know the parameters to assess opportunities for new business ideas 4. Identify the various forms of entrepreneur and to correlate which form of business will suit their need 5. Understand the environment and to apply the strategies to enter into new market
	UCBAO620 Fundamentals of Information Technology and System	1. Well-versed in the basics of information system and technology 2. Understand programming languages to coordinate the operative and management functions 3. Equip with the practical knowledge of information technologies and implement in their organisation 4. Acquire knowledge over the basic concepts of information systems and can implement in their organisation 5. Gain knowledge on all the management functions inculcating with IS and IT
	USBAF520/USBAF620 Applications of GST	1. Study the basic concepts of GST 2. Learn the registration of tax filling 3. Understand the GST returns 4. Learn the composition scheme 5. Know the input tax credit
	UGBAA520/ UGBAA620 Human Resource Management	1. Integrate the knowledge of HR concepts 2. Apply the gained knowledge of Recruitment, Selection and Training in their career 3. Be able to implement and evaluate the requirements of performance appraisal and training of the employees 4. Gain knowledge over welfare measures and safety measures of the employees 5. Equip with the knowledge of the challenges of HR and talent management
	USBAA120/USBAA220 Life Style Management	1. Be equipped with the talent of self management 2. Acquire the skills of Stress management

		3. Be able to manage time 4. Be able to tackle and manage various situations 5. Familiarized in the skills of Career Management
	USBAB120/USBA B220 Winning Through Communication	1. Be able to understand the concepts in communication 2. Attain skill in writing letters and resume 3. Be trained in drafting business correspondence 4. Able to draft effective business report with brevity and clarity 5. Gain confidence in various career development initiatives like Group Discussion, Role play and interviewing techniques
B.B.A Hospital Administration	UCHAA20 – FUNDAMENTALS OF MANAGEMENT	1. Understand the management theories, functions and responsibilities of managers. 2. Formulate and design plans by suitably applying SWOT in decision making. 3. Relate and discuss the process of organising, delegating and staffing in an organisation. 4. Recognise the need of directing, coordinating and controlling in the work environment. 5. Classify and determine reporting and budgeting process
	UCHAB20 – FOUNDATION IN HOSPITAL ADMINISTRATION	1. Understand the functions of various healthcare systems and learn relevant medical terminology. 2. Understand, recognize the importance of communication skills and develop it effectively. 3. Understand and enhance analytical skills. 4. Understand, recognise the importance of computer skills and develop it. 5. Develop the personality skills of an individual.
	UAMST20 – ALLIED I: MEDICAL STATISTICS	1. Solve basic mathematical problems using matrices 2. Use various differentiation techniques 3. Give graphical representation of statistical data 4. Understand the concepts related to statistics 5. Analyze problems related to statistical measures
	USHAA120 - SKILL BASED ELECTIVE I: LIFE SKILLS	1. Understand and deliver Basic Life Support (BLS) in case of emergency. 2. Recognise the sources and effects of radiation and learn the principles of Radiation Protection and Safety. 3. Understand and demonstrate the various steps of hand hygiene. 4. Comprehend several occupational health hazards and its preventive measures. 5. Acquire knowledge on the Fire Safety and Disaster Management and practical exposure to handle fire extinguishers.

	UCHAC20 – HEALTH CARE ETHICS	1. Understand and recognize the role of ethics in business. 2. Understand and recognize the social responsibilities of business entities towards staff, stakeholders and community. 3. Understand and interrelate fundamental aspects of medical ethics. 4. Recognize and infer various aspects of healthcare and research which may infringe on patient rights. 5. Distinguish various aspects of end and beginning of life ethical issues and ensure ethical compliance.
	UCHAD20 - MEDICAL TERMINOLOGY FOR ADMINISTRATION	1. Understand and recognize the fundamentals of Anatomy and Physiology. 2. Comprehend various Musculoskeletal System of a human body. 3. Recognize and understand cardiovascular system, respiratory system, digestive system and excretory system. 4. Develop ability to read and understand medical documentation and medical literature. 5. Recognize and learn the meanings of Standard Medical Abbreviations
	UAORA20 – Operations Research	1. Understand the basic operations research concepts and solve linear programming problems. 2. Analyze real-life situation using transportation models. 3. Assign jobs to different machines using assignment models. 4. Use knowledge of Network Analysis in Hospital Administration. 5. Acquire wide knowledge in Game Theory.
	USHAB220 – SKILL BASED ELECTIVE II: PRACTICAL: COMMUNICATION SKILLS IN ENGLISH	1. Understand the elements, types, process and barriers in communication. 2. Develop the skill of communicating through drafting various types of letters for business and banking correspondence. 3. Improve the vocabulary for daily usage. 4. Be able to write discharge summary and consent form related to hospitals. Also prepare the students for group discussions and role plays. 5. Develop the skill to make students prepare PowerPoint presentations
	UCHAE20 – HEALTH CARE LAWS	1. Understand the principles and nature of forming Society, basics of constitution required for the hospital and applicability of the Companies Act. 2. Recognize and interrelate various Labor laws and its applicability to Hospitals. 3. Gain knowledge in the duties of medical practitioners and Laws relating to it and list the Acts and Rules that are connected with medical practice. 4. Understand the Medical Jurisprudence in India and have in depth knowledge about precautionary steps to avoid litigation.

		5. Recognize the applicability of Laws on Hospital Administration and understand the obligations pertaining to the implementation of Laws applicable to hospitals.
	UCHAF20 HOSPITAL OPERATIONS MANAGEMENT – I	1. Understand the classifications of hospitals, roles of hospital administrators, essential hospital operations indicator and current trends in healthcare. 2. Recognize and interrelate functions and layout of OPD, inpatient services and different forms of ward. 3. Understand the role and tasks of a nurse and determine the nursing staff requirement in a hospital. 4. Gain knowledge in function of Hospital Infection Control Committee in the hospital and Understand the prevalence of infection and the role of Hospital Infection Control 5. Understand the functions of these clinical support services and able to categorize the same.
	UCHAG20 - ACCOUNTING FOR HOSPITAL ADMINISTRATORS - I	1. Acquire conceptual knowledge of basics of accounting and understand the accounting concepts, principles and conventions. 2. Understand and apply the rule of accounting equation and the dual entry recording framework to a series of transactions that results in a balance sheet. 3. Apply the golden rules of accounting and able to record journal entries and prepare ledger accounts using double entry book keeping. 4. Be able to prepare various subsidiary books like sales book, purchases book, purchase returns book, sales returns book, bills receivable book, bills payable book and cash book. 5. Understand the purpose of balance sheet, prepare financial statements in accordance with appropriate standards and report the results of a firm.
	UAHCE20 –ALLIED III: HEALTHCARE ECONOMICS	1. Gain Knowledge in basic concepts of economics including managerial economics, macro and microeconomics, types of economy and understand the size and relevance of health economics. 2. Develop skills to manage demand for health care and understand behavior of consumers in the health care sector. 3. Understand the concept fundamentals of hospital and physician services production including the concepts of economies of scale, and technology adoption decision. 4. Acquire the ability to evaluate health economics and understand the concept of healthcare market and health insurance. 5. Analyze the environmental influences on the health care sector and identify the impact of tobacco, alcohol, drugs and other communicable diseases on the economy.

	UEHAA20 - ELECTIVE I A: BUSINESS ENVIRONMENT	1. Understand the concepts in business environment globally and in Indian context 2. Learn the concept of business cycle. 3. Understand social responsibility and social audit. 4. Acquire an overview about the Consumer Protection Act. 5. Understand the concepts of privatization and liberalization.
	UEHAB20 – ELECTIVE I B: LOGISTICS & SUPPLY CHAIN MANAGEMENT	1. Understand and identify the stages and scope of logistics and supply chain management. 2. Develop the conceptual knowledge about the process of supply chain and its drivers. 3. Relate the various network decision options available. 4. Compare the pricing strategies adopted by various firms. 5. Identify and relate the stakeholders and their impact on supply chain in healthcare sector.
	USHAC320 - SKILL BASED ELECTIVE III: WELLNESS MANAGEMENT	1. Enhance personality management and emotional intelligence with SWOT analysis. 2. Develop skills to identify stressors to manage stress. 3. Develop skills to give priority to urgent and important work to save time. 4. Improve skills to manage conflict, crisis, events and responsible use of technology. 5. Cultivate the habit of taking nutritious diet and exercise for physical fitness.
	UCHAH20 - HUMAN RESOURCE MANAGEMENT AND DEVELOPMENT	1. Gain knowledge in basic concepts of Human Resource Management and enable in drafting an HR planning model. 2. Develop the competency to recruit select, train employees and appraise the performance of the employees. 3. Understand the nature of a job and role of employees using job analysis and job design to attain Quality Work Life and participate in the decision making process. 4. Understand the various employee benefits safety, health and welfare measures adopted in an organization to acquire the ability to handle employee issues and learn the new trends in HRM 5. Inculcate values and ethics in Human Resource Management.
	UCHAI20 - HOSPITAL OPERATIONS MANAGEMENT – II	1. Understand the factors responsible for good public relations and discuss on common problems of public relations in the hospitals. 2. Recognize and interrelate the structure and the overall functioning of materials department. 3. Familiarize with the Billing system and payment systems in a hospital and understand the functions of MRD. 4. Perceive the functions of engineering service department and its service types. 5. Categorize various support services in a hospital and understand its functions.

	UCHAJ20 INTRODUCTION TO RESEARCH METHODOLOGY	1. Understand the various types of research and apply it in real life study. 2. Distinguish the types of research design, understand the concept of Hypothesis and formulate the same. 3. Comprehend the various types of sampling techniques, scaling techniques and measurements. 4. Distinguish various types of data collection methods and enable the students to draft questionnaire incorporating the scaling techniques. 5. Enable the students to analyze data using statistical packages and to follow a systematic process to write a research report.
	UCHAK20 – HEALTH SERVICES MARKETING	1. Understand the similarities and differences in service based and physical product based marketing activities. 2. Develop the competency to plan, create, price and distribute new service. 3. Understand the various strategies used for competition analysis, promotion and branding the service to avoid service failure. 4. Acquire the ability to manage and improve service quality and customer relationships. 5. Understand and identify the role of employee and consumer in service delivery process to manage critical issues in demand and capacity of service.
	UAAHA20 – ALLIED – IV: ACCOUNTING FOR HOSPITAL ADMINISTRATORS – II	1. Gain knowledge in basic concepts, tools and techniques of management accounting. 2. Be able to analyze the annual reports of an organisation and interpret the required financial information by calculating various ratios. 3. Classify the costs to better understand the business expenses and prepare cost sheet by breaking cost based on its types. 4. Prepare funds flow statement, cash flow statement and evaluate the fund movements and cash position of an organization. 5. Apply the cost, volume and profit concepts, prepare various budgets like cash budget, production budget, sales budget that aids in decision making.
	USHAD420 – SKILL BASED ELECTIVE IV: COMMUNICATION SKILLS IN HINDI (Practical)	1. Learn the basic words and phrases. 2. Develop the skill of communicating in a hospital scenario through practice 3. Learn Hindi numerals. 4. Be able to direct and speak politely and with due respect. 5. Develop the skill to use appropriate terms and statements.
	UCHAL20 – QUALITY IN HEALTHCARE	1. Gain Knowledge in the history of quality and quality principles and understand the seven tools of quality.

		2. Analyze the need for healthcare quality management in hospitals and identify the variation in medical practice and implication for quality. 3. Recognize, categorize and evaluate clinical and operational issues and ways to address it for efficient patient safety. 4. Understand and differentiate types of audit and gain knowledge in various accreditations and its benefits. 5. Analyze, interpret and understand the role of quality team and quality steering committee in a hospital.
	UCHAM20 - ORGANIZATIONAL BEHAVIOUR	1. Understand the basic concepts, theories and models of Organizational behavior. 2. Develop the perceptual skills and its application in the decision making process and gain knowledge in the factors affecting learning and effective learning process. 3. Understand the group dynamics and acquire skills required for working in groups. 4. Understand the various determinants of Stress and coping strategies to develop skills to resolve organizational conflicts. 5. Analyze and compare different theories used to explain individual behavior related to motivation and leadership.
	UCHAN20 – GLOBAL HEALTHCARE SYSTEM	1. Realize the challenges faced by hospitals which have implemented medical tourism in their system. 2. Recognize and distinguish various aspects of healthcare delivery of NHS UK from Indian healthcare system and compare the governance, finance and technology aspects of NHS UK with other countries. 3. Recognize and distinguish various aspects of healthcare delivery of Canadian healthcare from Indian healthcare system and compare the governance, finance and technology aspects of Canadian healthcare with other countries. 4. Recognize and distinguish various aspects of healthcare delivery of Japanese healthcare from Indian healthcare system and compare the governance, finance and technology aspects of Japanese healthcare with other countries. 5. Recognize and distinguish various aspects of healthcare delivery of Malaysian healthcare from Indian healthcare system and compare the governance, finance and technology aspects of Malaysian healthcare with other countries
	UCHAP20 - PROJECT	1. Identify the existing problem in the work environment. 2. Devise a suitable plan for solving the problem. 3. Understand and interrelate fundamental aspects based on the available literatures. 4. Analyse and interpret data for decision making. 5. Document and provide feasible solutions which will promote the organisation

		growth and the student's career growth.
	UEHAC20 - ELECTIVE II A: HEALTHCARE INSURANCE	1. Acquire knowledge on basic terminologies of insurance and describe the role of health insurance for individuals. 2. Understand the various types of health insurance policies offered to individuals in India and the rules that govern and protect policy holders. 3. Familiarize with various health insurance policies offered by Government for poorer sections of the society. 4. Understand the basic tools and principles of underwriting and the rules governing the same. 5. 5. Comprehend the claims management in insurance and understand the role of Third Party Administrators (TPA).
	UEHAD20 – ELECTIVE II B: E BANKING	1. Acquire conceptual knowledge of E-banking, describe its features and compare it with traditional banking. 2. Understand the need for computerization in banks and describe the advantages and disadvantages of online banking. 3. Introduce the need for security and apply those to overcome cybercrimes. 4. Familiarize the crypto system followed in E-banking. 5. Understand the E-Security solutions and the various software used as security in E-banking.
	UGHAA521 – NON MAJOR ELECTIVE I: MANAGEMENT INFORMATION SYSTEMS	1. Identify strategic uses of information systems in management. 2. Evaluate operational and tactical information systems in functional areas of business including marketing, finance and human resource. 3. Enhance skills in planning, analyzing and designing information systems. 4. Realize the roles and responsibility of information system professionals to control issues related to information theft. 5. Gain Knowledge in various Hospital Management software used for prescribing medicines, laboratory reports and logistics and inventory management.
	USHAE520 - SKILL BASED ELECTIVE V: PRACTICALS : ACCOUNTING PACKAGES	1. Gain knowledge in various accounting packages and the basics of Tally ERP 9.0 2. Be trained in creating company, enter accounting vouchers and to print profit and loss and Balance Sheet. 3. Prepare inventory and stock items for an organisation and print the stock summary report. 4. Understand how to create and maintain cost categories, cost centres of a product for easy processing of sales and purchase inventories. 5. Analyse the financial statements using ratio analysis and interpreting the results

		thereof.
	UCHAP20 - PUBLIC HEALTH AND COMMUNITY	1. Understand the history of medicine, dawn of scientific medicine and healthcare revolution. 2. Analyze the principles of health management and planning cycle and various health delivery systems. 3. Understand the uses of Epidemiology and concepts of screening for disease. 4. Realize and differentiate communicable and non-communicable diseases and conceptualize various National Health Planning in India and its impact. 5. Understand the importance of nutrition and health, environment and health in health status.
	UCHAQ20 - MATERIALS AND EQUIPMENT MANAGEMENT	1. Understand the need and importance of materials management in the hospital. 2. Develop and manage a purchase system for the hospital. 3. Plan and implement equipment purchase and develop audit and maintenance systems for hospital equipment. 4. Understand, interrelate various aspects of receiving and inspection and stores in materials management. 5. Recognize the importance of value and inventory management in materials management and select the appropriate methods for sustainable economic functioning.
	UCHAR20 - INTERNSHIP	1. Identify work and its function in the economy 2. Develop communication, interpersonal and other critical skills for employability. 3. Realize the importance of professionalism in the workplace. 4. Gain ethical experience in organizational culture. 5. Ability to identify the diverse needs and global issues for sustainable growth
	UGHAB620 - NON MAJOR ELECTIVE II: PRACTICALS: ADVANCED EXCEL	1. Gain knowledge in basics and advanced Microsoft Excel. 2. Be trained in creating worksheet, enter data set and can perform all arithmetic operations using formulas. 3. Prepare and can calculate the pay roll of employees in an organization. 4. Understand how to create and extract pivot table from the data set. 5. Analyze the data sets using various graphic tools and functions.
	USHAF620 - SKILL BASED ELECTIVE VI : SOCIAL ENTREPRENEURSHIP	1. Understand the theory of social entrepreneurship, and distinguish social entrepreneurship from other entrepreneurial and social work. 2. Be able to identify the different forms of social enterprise including nonprofit proprietorship, trust and section 25 companies. 3. Identify an unsatisfactory social equilibrium, and actively pursue a solution to create

		a more just, fair, and sustainable model. 4. Learn the opportunities of social entrepreneurship by understanding the concept of startups, incubation center, venture capital and CSR fund. 5. Be able to develop social entrepreneurship by understanding the success story of various social entrepreneurship like Aravind Eye Hospital.
M.B.A	PCBAA20 MANAGEMENT PROCESS	1. Attain the knowledge of the functions and importance of management. 2. Be confident on the planning and decision-making process involved in organization as well as in personal life. 3. Come to know about the types of organization and equip themselves accordingly in their career ahead. 4. Understand the process of recruitment, selection and appraisal, the students prepare themselves to meet the needs of the industry. 5. Adopt a style of leadership and practice controlling techniques when they start their career in the field.
	PCBAB20 ORGANIZATIONAL BEHAVIOR	1. Asses an organization and classify the contributing disciplines, approaches to OB 2. Acquire knowledge in applying personality traits and motivational theories. 3. Analyse the behaviour of individuals and groups in organizations in terms of key factors. 4. Ability to comprehend the leadership skills and effective communication systems. 5. Assess the potential effects of organisational factors develop skills in handling stress and manage Quality of work life.
	PCBAC20 ECONOMICS FOR MANAGEMENT	1. Understand the concept of Economics 2. Acquire the acquaintance of Demand and Supply 3. Apply the Conception of Cost Production Function 4. Understand the assumption of pricing and Market competition 5. Acquire the knowledge on Macroeconomics, Inflation
	PCBAD20 ACCOUNTING FOR MANAGEMENT	1. Be able to acquire depth knowledge in accounting and will be capable of preparing financial income statement and financial balance sheet. 2. Be capable of preparing analysis and interpreting financial statements using various tools. 3. Gain knowledge how to prepare fund flow statement and cash flow statement and using the same for decision making in business 4. Gains knowledge on the concepts of management and cost accounting techniques, preparation of cost sheet, valuation of stock, pricing of material issues and prepare accounting for stage wise production under different process

		5. Acquire Knowledge to help the management in decision making in the form of preparing budgets and price fixation
	PCBAF20 MANAGEMENT INFORMATION SYSTEM AND TECHNOLOGY	1. Understand about management information system concepts and resources 2. Be able to analyze various concepts of information technology 3. Be able to classify the different functional business systems using information system and technology and can implement in their organization 4. Enhance the planning and developing skills and master in business IT environment 5. Adhere ethical responsibility of business concepts
	PJBAA20 BUSINESS LAB – I: ENGLISH FOR PROFESSIONAL COMMUNICATION	1. Apply the basics of speaking English in everyday conversation and professional need. 2. Ability to draft letters based on the requirement 3. Acquire the ability to write reports, agenda and minutes of a meeting 4. Prepare and make appropriate business presentations 5. Increase employability quotient with professional and ethical responsibilities.
	PJBAB20 PRACTICAL – I: MS OFFICE AND ADVANCED EXCEL	1. Master in the use of strategies, such as mail merging, creating articles. 2. Draft and to animate the presentations using power point 3. Analyse formulas and feeding the data in the excel 4. Develop and create charts and pivot table 5. Enhance and develop their ability to solve using conditionals and lookup functions in advanced excel.
	PCBAG20 SUPPLY CHAIN MANAGEMENT	1. Acquire knowledge on Supply Chain activities in the market and implement Supply Chain Management. 2. Evaluate the various networks and its flaws. 3. Distinguish the various inventory models in supply chain. 4. Implement the supply chain network for logistics. 5. Elaborate the current trends and technological implementation in the supply chain 6. environment.
	PCBAH20 MARKETING MANAGEMENT	1. Demonstrate the strong conceptual knowledge in marketing and its functions. 2. Be able to segment the customer and identify their behavior. 3. Aware of all the 4 P's of marketing mix and its importance in implementing marketing strategies. 4. Utilize the available marketing channels in optimum levels. 5. Updated with the recent types of marketing and will be motivated towards marketing research.

	PCBAI20 - HUMAN RESOURCE MANAGEMENT	1. Acquire Knowledge on the perspectives of HRM 2. Understand the formation of the concept of Best Fit Employee for a job 3. Study the Process of Executive and Career Development Programme 4. Understand the concepts, Benefits, of Sustaining Employee Interest 5. Acquires knowledge on Challenges in HRM .
	PCBAJ20 - FINANCIAL MANAGEMENT	1. Be well-versed in the financial decision, functions and organization of financial managements. 2. The can also come out with knowledge to value bonds and shares in practice. Can come out 3. with the practical knowledge of evaluating capital investment using traditional and modern 4. capital budgeting methods. 5. 2. Gain practical knowledge in calculating cost of different capitals. 6. 3. Acquire knowledge over capital structure and work out capital structure under different approaches. 7. Students also gain practical knowledge over dividend policy and its determinants. 8. 4. Gain both theoretical and practical knowledge on working capital management including receivables, 9. payables, inventory and cash management.
	PCBAL20 – ENTERPRISE RESOURCE PLANNING	Understand how ERP is evolved and analyze various risk in ERP 2. Be able to integrate and analyze related technologies with ERP and also to understand the entire product life cycle starting from manufacturing till SCM and CRM 3. Be able to classify the legacy system with ERP system and able to apply various transition strategies according to the organization 4. Can analyze the success and failure factors and will be able to apply the success factors in post implementation phase 5. Understand and use the idea of SAP AG, SAP Net weaver in the enterprise
	PJBAC20 - INNOVATION AND START-UP MANAGEMENT	1. Have the ability to discern distinct entrepreneurial traits 2. Write a business plan. 3. Be able to know the parameters to assess Opportunities for new business ideas. 4. Understand the Governmental schemes for entrepreneurial growth in India. 5. Know to register in e-commerce, trade mark and patent.

	PJBAD20 - ACCOUNTING SOFTWARE	1. Understand and learn the various accounting packages and the basics of Tally Erp 9.0 2. Be able to enter accounting vouchers and to print profit and loss and Balance Sheet. 3. Be able to prepare inventory and stock items for an organization and print the stock summary report. 4. Understand how to create and maintain cost categories, cost centres of a product for easy processing of sales and purchase inventories. 5. Analyze the financial statements using ratio analysis and interpreting the results thereof.
	PCBAM20 – BUSINESS LAW	1. Acquire Knowledge on Commercial law 2. Understand the formation and need for Company law 3. Study the requisites of Negotiable Instrument and registration of firm 4. Understand the concepts and scope of Value Added Tax and Information Act 5. Acquires knowledge on Consumer Protection Act and Cyber Laws
	PCBAN20 – STRATEGIC MANAGEMENT	1. Understand the strategic decisions that organizations make and have an ability to engage in strategic planning. 2. Explain the basic concepts, principles and practices associated with competitive advantage. 3. Integrate and apply knowledge gained in basic courses to the formulation and implementation of strategy from holistic and multi-functional perspectives 4. Analyze and evaluate critically real life company situations and develop creative 5. solutions, using a strategic management perspective. 6. Understand the crucially important role that the HRM function plays in the setting and implementation of an organization's strategy
	PJBAE20 - STOCK TRADING	1. Understand the basics in stock market and stock exchanges 2. Study the capital market and trading settlement 3. Understand the stock charts and signals. 4. Understand the financial derivatives contracts 5. Learn the mutual funds and its investment modes
	PJBAF20 INSTITUTIONAL TRAINING	1. Integrate the theoretical knowledge with the real work experience 2. Create interest in the area of specialization 3. Experiential learning in the various functions of the organization. 4. Build a record of work experience and to develop habits and attitudes necessary for job success 5. Acquire employment contacts leading directly to a full-time job following

		graduation
	PCBAO20 PRODUCTION AND OPERATIONS MANAGEMENT	1. Appreciate the principles and applications relevant to the production and operation systems of manufacturing/service firms. 2. Reveal the ability to apply some forecasting techniques, enlarge basic materials requirement schedules and develop an aggregate plan and describe the boundaries of an operations system, and recognize its interfaces with other functional areas within the organization and with its external environment. 3. To understand techniques of location and facility planning; line balancing; job designing; and capacity planning in operations management. 4. Plan and implement suitable materials handling principles and practices in the operations. 5. Plan and implement suitable quality control measures in Quality Circles to TQM.
	PCBAP20 INTERNATIONAL BUSINESS AND ETHICS	1. Understand the emergence and needs of Globalization in Business and acquire the concepts of International Business theories and Strategies. 2. Study the requisites of FDI & Global Monetary System. 3. Understand the Culture Differences in Business. 4. Acquire the knowledge on Ethics in the workplace. 5. Analyze the Ethical issues and challenges.
	PEMKA20 ELECTIVE I A - RETAIL MARKETING	1. Be provided with a comprehensive view of retailing and rural marketing in the distribution component. 2. Come to know about the various operational and administrative aspects of the ever growing retailing. 3. Come to know the application of marketing concepts in a practical retail managerial environment 4. Gains understanding about the globalization of the retail industry and its Opportunities 5. Understand and investigate the changing role of internet and use of technology in Retailing
	PEMKB20 ELECTIVE I B - SERVICES MARKETING	1. Have thorough understanding of services marketing, 2. Acquires knowledge of services strategies including service product and delivery 3. Gains knowledge of competitors and learns the strategies to be adopted 4. Come to know the Customer Service oriented mindset and fill the service gaps. 5. Acquire in depth understanding of the challenges in managing and delivering the quality services.
	PEMKC20	1. Understand advertising management with regard to 4 P‘s of marketing mix.

	ELECTIVE I C - ADVERTISING AND SALES PROMOTION	2. Be able to design an advertising for the different media. 3. Gain importance of practicing ethical behaviour in advertising. 4. Acquire knowledge in various types of promotional techniques in detail. 5. Be able to estimate and allocate the budget in adopting promotional techniques.
	PEFNA20 ELECTIVE II A - SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT	1. Understand the various alternatives available for investment. Gain knowledge of the various strategies followed by investment practitioners. 2. Gain knowledge in the financial market and SEBI regulations. 3. Understand fundamental analysis in the Economy, Industry and company 4. Identify the chart patterns used to depict the stock market. 5. Measure risk and return and find the relationship between risk and return.
	PEFNB20 ELECTIVE II B – MERCHANT BANKING AND FINANCIAL SERVICES	1. Understand the role of merchant bankers in the issue management activities and familiarize with the SEBI regulation 2. Know about the capital market and its functioning 3. Examine financial services as an important and contemporary area of financial management 4. Acquire the financial evaluation technique of leasing, venture capital and hire purchase 5. Gain a deep understanding on credit rating and its regulations
	PEFNC20 ELECTIVE II C - RISK MANAGEMENT AND DERIVATIVES	1. Understand the concepts on risk and its sources 2. Gain knowledge in risk management techniques 3. Understand the concepts of financial derivatives. 4. Gain knowledge in the derivatives markets in India 5. Acquire knowledge and skills in the advanced financial derivatives
	PEHRA20 ELECTIVE IIIA - COMPENSATION MANAGEMENT	1. Understand the concept of the compensation system and the pay model. 2. Attain in depth understanding of the evaluation of the job and its description 3. Acquire the knowledge about the design and examine the pay level based on the person competencies. 4. Acquire and absorb knowledge based on the benefits and services provided in the form of wages and salaries 5. Acquires the knowledge about the level of pay based on the performance and the market competitiveness
	PEHRB20 ELECTIVE III B - TRAINING AND DEVELOPMENT	1. Understand the concepts, process, models and approaches involved in training 2. Explain the training design and interpret the various learning dimensions. 3. Apply training methods based on the nature of the groups. 4. Integrate various training methods in classroom and professional environment

		5. Understand and apply the assessment and model of evaluation
	PEHRC20 ELECTIVE I C- INDUSTRIAL RELATIONS	1. Expertise on Industrial Concept and Labour Force in India 2. Understand the concept, formation, types of Trade Union in India and its Functions 3. It enables learners to gain in depth acquaintance on resolution of Disputes and Maintain Industrial harmony 4. Understand the nature, causes of Grievance Procedure and the maintenance of Successful Collective Bargaining 5. Learners acquire essential awareness on the Technological changes involved in 6. Maintaining Industrial Relations
	PESSA20 ELECTIVE IV A - CLOUD COMPUTING	1. Understand how Cloud is evolved and will come out with good conceptual knowledge in Cloud Computing 2. Analyze the services, and platforms in Cloud 3. Come with awareness on various cloud providers 4. Attain knowledge of Gridding and networking 5. Enable the students to have a skill with Internet of Things
	PESSB20 ELECTIVE IV B - DIGITAL BUSINESS AND E COMMERCE	1. Understand about emergence of E-commerce 2. Analyze various technologies used to develop digital business environment 3. Understand the concepts of E- marketing and Digital payment 4. Students adhere to the values and ethics relevant to the digital payment in business environment 5. Have knowledge to establish new strategies and master in E- Commerce
	PESSC20 ELECTIVE IV C - DECISION SUPPORT AND BUSINESS INTELLIGENCE	1. Enable the student to understand about decision support systems 2. Able to analyze various phases of decision making and components of decision support system 3. Understand the modeling approaches of decision making and can implement in their organization. 4. Be able to enhance the data mining skills by applying knowledge discovery 5. Master in decision making skills on analyzing the data warehousing and mining concepts
	PEHCA20 ELECTIVE V A - HOSPITAL DESIGN AND OPERATION MANAGEMENT	1. Understand and infer the importance of hospital planning and identify the factors influencing outcomes 2. To identify, understand and differentiate the various steps involved in hospital planning 3. Understand, recognize and interrelate the steps involved in hospital planning

		4. Gain the knowledge in the functions and requirements of various clinical services in the hospital 5. Understand the functions and requirements of various support services in the hospital 6. Be able to develop, plan and implement engineering services for the hospital
	PEHCB20 ELECTIVE V B - HOSPITAL MATERIALS AND EQUIPMENT MANAGEMENT	1. Understand and interpret the role of materials management in the hospital. To understand, recognize and interrelate the components of purchase system in materials management Understand, recognize and interrelate the components of purchase system in materials management. To develop and critique a purchase system for the hospital 2. Understand, interrelate aspects, develop and critique the stores system for the hospital 3. Be able to plan and implement equipment purchase and utilization assessment systems 4. Recognize the importance of new technologies and trends in materials management and select the appropriate methods for sustainable economic and efficient functioning To plan and develop long term strategies for materials planning in the hospital
	PEHCC20 ELECTIVE V C - HOSPITAL QUALITY MANAGEMENT AND LEGAL ASPECTS	1. Understand and distinguish the role of management and healthcare indictors in the hospital 2. Understand, recognize and interrelate the functions of various clinical services in the hospital 3. Recognize and interrelate the functions of various non-clinical services in the hospital 4. Gain knowledge various aspects of quality in the hospital from the viewpoint of accreditation and certification 5. Understand the various legal requirements for hospitals and design effective methods to ensure legal compliance in the hospital.
	PELMA20 ELECTIVE VI A – LOGISTICS MANAGEMENT	Analyze how logistical decisions (e.g., facilities, inventory, and transportation) impact the performance of the firm as well as the entire supply chain. 2. Analyze the strengths and weaknesses of packing and the emerging trends in the same. 3. Develop the strategies that can be taken to find the best paths to route vehicles to deliver and collect goods at multiple stops. 4. Develop strategies logistics reengineering and compete with the latest technology. 5. Know the basic characteristics of inbound and outbound logistics

	PELMB20 ELECTIVE VI B – EXPORT AND IMPORT MANAGEMENT	1. Remember the basics of global trade and import and export policies 2. Understand various import process and procedures and agencies involved in EXIM process and their role in the international trade 3. Acquire knowledge on the various modes of transportation. 4. Understand the payment methods, risks and various financing of water carriers. 5. Elaborate the procedures of Air Carriers.
	PELMC20 - ELECTIVE VI C - GREEN SUPPLY CHAIN AND LOGISTICS MANAGEMENT	1. Remember the basics of Green Supply Chain Management. 2. Understand various procedures in ECO Design with its drivers. 3. Acquire knowledge on green purchasing. 4. Understand the concepts in green manufacturing and its challenges. 5. Be aware on green logistics and its drivers.
	PCBAQ20 PROJECT	1. Compare and contrast several existing solutions for research challenge 2. Formulate and propose a plan for creating a solution for the research plan identified 3. Conduct a survey of several available literature in the preferred field of study 4. Be able to report and present the findings of the study conducted in the preferred domain 5. Demonstrate an ability to work in teams and manage the conduct of the research study 6. Acquire employment contacts leading directly to a full-time job following graduation
	PIBAA20 MANAGEMENT CONCEPTS IN THIRUKKURAL	1. Acquire Knowledge on Verses of Thirukkural in Business Ethics 2. Understand the formation and need for Decision Making Process and Leadership 3. Study the requisites of Goal Setting and Capital Investment Decision 4. Understand the Concepts and Scope of Social Responsibility and Stress Management 5. Acquire knowledge on Personnel Selection and Welfare
	PIBAB20 DISASTER MANAGEMENT	1. Understand the knowledge about the concept of Disaster 2. Attain in depth understanding of the various dimensions and typology of disasters 3. Acquire the knowledge different National & International Agencies for disaster Management in India 4. Acquire the knowledge and information related to Disaster Mitigation, Preparedness & Planning 5. Empower and inhibit the knowledge about the Disaster Rehabilitation & Futuristic Sustainable Measures adopted
	PIBAC20 - INDUSTRIAL	1. Acquire Knowledge on Industrial safety Management

	SAFETEY AND POLLUTION MANAGEMENT	2. Understand the formation and need for insight on Industrial Accidents 3. Attain knowledge in the requisites of legal provisions towards Safety 4. Understand the concepts of Environmental Management 5. Acquires knowledge on Environmental Pollution Act
	PIBAD20 - EVENT MANAGEMENT	1. Understand the emergence and needs of the Event Management 2. Analyze the Nature of Conference Markets 3. Have the ability to understand the Contract Negotiations 4. Attain the skills in event management and Customer care management 5. Evaluate the Tourism Growth and Travel Industry Fairs
	PIBAE20- FAMILY BUSINESS MANAGEMENT	1. Understand the emergence and needs of Family Business 2. Acquire the concepts of Family Culture, and its Employment Policy 3. Gain the knowledge in possession of Family Business 4. Understand the progression of Family Business 5. Acquires the knowledge on Strategic planning for Family Business
	PIBAF20- MALL MANAGEMENT	1. Understand the Emergence and Development of Shopping Mall 2. Acquire Knowledge on Revenue Model of the mall 3. Gain knowledge in the Promotional Activities of Mall 4. Investigate the Facilities Required for Mall Management 5. Obtain the Awareness on Upcoming Mall Challenges
	PIBAG20- INNOVATION AND CREATIVITY	1. Acquire Knowledge on the Outlook of Creative Thinking 2. Enrich the Creative Thinking of Individuals 3. Be able to acquire essential knowledge needed for building creativity lifelong 4. Gain in depth knowledge in Strategy Innovation 5. Acquires knowledge on Managing Innovation
	PIBAH20 - RURAL MARKETING	1. Understand the factors that influences the rural market environment. 2. Analyse rural market potential and Opportunities in regard with the consumption pattern of the rural population. 3. Understand and apply the various pricing in relation to the quality of the product and the need. 4. Identify the efficient marketing strategies in relation to the channels which influence decision making of the rural customers. 5. Gain insight about the adequate and effective promotion and distribution strategies
	PIBAI20 - TRAVEL AND TOURISM MANAGEMENT	1. Have basic understanding in Travel and Tourism Management 2. Accustom on Tourism and Transport the different types of transport 3. Procure knowledge on endorsement of Travel Agents

		4. Gain knowledge in the characteristics of Travel Agencies 5. Be educated the on Tourists Conduct Motives and behaviour
	PIBAJ20 – CYBER SECURITY AND LAWS	1. Enable the student to understand about cybercrime and risk in Systems 2. Analyse application securities enable students to understand the type of hackers and the techniques 3. Be able to classify Security threats Security issues in hardware and able to implement in work place 4. Adhere to the values and ethics relevant to the Cybercrime in business environment. 5. Establish awareness in current issues from diverse aspects online transactions
	PIBAK20 - MANAGEMENT OF MULTI NATIONAL CORPORATION	1. Understand international management with various schools of thoughts along with the problems faced by host countries. 2. Demonstrate the ability to apply different management styles. 3. Demonstrate the ability to effectively work in teams in various MNC's. 4. Demonstrate strategies, ethical values and CSR in business. 5. Identify and describe the complexities of managing international mergers and acquisitions and understand the challenges and opportunities of global scenario
	PIBAL20 WORK LIFE BALANCE AND EMOTIONAL INTELLIGENCE	1. Assess an organization and introduce to work life Balance insisting on spirituality in the work place 2. Acquire knowledge critical thinking, interpersonal relations and conflict management 3. Enhance creativity and get an in-depth knowledge on event management. 4. Ability to comprehend Emotional Intelligence with is concepts and nature 5. Assess the potential effects emotions with the various process in the Organization
M.S.W	PCSWA20 - INTRODUCTION TO SOCIAL WORK AND SOCIOLOGY	1. Able to Understand Social Work as a Profession. 2. Understand various ideologies of social work. 3. Demonstrate awareness of values and ethics of the social work Profession 4. Become aware of the emergence, growth and development of Social Work as a Profession 5. Consciously use Social Work knowledge and demonstrate professionalism as a trainee 6. Gain wider knowledge on diverse approaches and be able to appropriately use theories and approaches in her field work placements and Practice Social Work in an International context.

	PCSWB20 - SOCIAL CASE WORK	1. Analyse and practice the basic philosophy, principles and values of social work as a method of social work. 2. Acquire and develop the skillsin recording, reflecting and evaluating on the work to grow professionally. 3. Effectively understand the scope of social work. 4. Study and support the application of theories and models in addressing the problems of individuals. 5. Appreciate and practice the basic philosophy, principles and values of social work as a method of social work. 6. Acquire skills in recording, reflecting and evaluating on the work to grow professionally.
	PCSWC20 – SOCIAL GROUP WORK	1. Develop the students on the activities of group work process and types of group, characteristics of group and group process 2. Examine the role of group worker in different settings 3. Acquire knowledge, skills and values in practicing Social Work with Groups 4. Plan interventions based on appropriate Group Work models 5. Demonstrate skills in applying Social Group Work in different settings. 6. Acquire skills in recording and documentation
	PESWA20 -ELECTIVE I A: SOCIAL PROBLEMS	1. Adopt strategies to solve social problems 2. Bring changes in the social structure without violence and coercion. 3. Modify the malfunctioning of the social and economic institutions. 4. Analyze social problems and highlight the significance of social work intervention in the Indian context. 5. Understand and keep in pace with the disasters and find ways to handle or manage disasters. 6. Critically analyze the impact of social problems on the society.
	PISWA20 - IEC- DISASTER MANAGEMENT	1. Develop skills to analyze the factors leading to disaster 2. Understanding of the process of Disaster Management and the various types of disasters 3. Practice the role of the Social Worker in Disaster Management 4. Equip themselves to work in disaster situations and Expose knowledge on the impact of disaster on individual and community 5. Develop skills to analyze the factors leading to disaster

	PCSWD18 – CONCURRENT FIELD WORK	1. Acquire knowledge, attitude and values for professional practice. 2. Develop skills to analyse socio –economic-cultural-rural realities and their impact on individuals, families, groups and communities 3. Initiated and use to acquiring skills in systematic observation, critical analysis, develop a spirit of inquiry and document learning through preparation of family and community profile/reports 4. Understand the role of a Social Worker in an agency and in the community 5. Enhance their ability to plan, organize programmes and contribute as a team member
	PCSWE20 - HUMAN GROWTH AND PERSONALITY DEVELOPMENT	1. Explore the developmental stages of life from a psychological perspective. 2. Summarize the relevance of psychology for social work practice 3. Explore the concept of social psychology and application of psychological tests 4. Understand the psychological bases and processes involved with cognition, learning, behaviour and personality development 5. Understand human growth and development across the life-span, life –events, relationships and mental health issues for effective practice 6. Obtain an insight to factors contributing to development of personality
	PCSWF20 – SOCIAL WORK RESEARCH	1.Demonstrate, develop and understanding the capability to independently conceptualize a problem and execute research 2.Organising and use research values efficiently to execute research studies independently 3.Appropriately apply statistical techniques in Social Work Research 4.Demonstrate knowledge and skills of application of qualitative research 5.Demonstrate, understanding and mastery of the knowledge, values, skills relevant to research competencies
	PCSWG20 – COMMUNITY ORGANISATION AND SOCIAL ACTION	1. Able to demonstrate familiarity with community organization and social action as methods of social work Profession 2. Able to develop skills of collecting and collating information to understand community its structure and Components. 3. Able to gain the experience and exposure to Practice community organization and social action at Micro and Macro levels 4. Understand the relationship of community organization and social action with other methods of social work. 5. Apply various approaches in community work along with the different steps to assess the community needs and to link them with the resources.

		6. Adapt strategies to solve social problems and bring changes in the social structure without violence and coercion. 7. Modify the malfunctioning of the social and economic institutions
	PESWC20 - ELECTIVE II A: SOCIAL POLICY AND SOCIAL LEGISLATION	1. Obtain knowledge and understand social welfare administration 2. Understanding of the concepts of social policy and social welfare policy to emphasize the importance of them. 3. Promote knowledge in understanding the cause and effects of discrimination and oppression. 4. Able to prepare modules and strategies for advocacy to bring sustainable social change 5. Obtain knowledge of legislative structure, frame and Process of making legislation. 6. Enriching knowledge about the importance of social legislation and the methods and models of social welfare administration
	PISWB20-IEC - WOMEN AND DEVELOPMENT	1. Examine the different needs and programmes of women empowerment and development 2. Demonstrate an ability to identify the working areas of women 3. Identify and understand the different situations and make women a part in development process 4. Identify and develop the process of protection of women health and environment 5. Implement the planning skills on development of women and know about the national policies related to women's empowerment
	PCSWH20– CONCURRENT FIELD WORK II	1. Understand and develop the professional skills in social work profession 2. Demonstrate ability to analyse the social situations of individuals, groups and communities 3. Understand the role of organisations and Practice the principles of Social Work 4. Identify and Execute the different methods of Social Work appropriately 5. Develop and use different skills in planning, identifying and mobilising resources to organize programmes and meet needs of different groups
	PCSWI20- COMPUTER APPLICATIONS FOR SOCIAL WORK	1. Understand, implement, evaluate the basic applications of artificial intelligence 2. Identify, select, and apply the different tools in spss 3. Understand and develop the basic work of the spss and assess the needed data 4. Formulating the various statistical analysis to test different hypothesis

	PSCDA20 – RURAL COMMUNITY DEVELOPMENT	1. Obtain knowledge and understand social welfare administration 2. Understanding of the concepts of social policy and social welfare policy to emphasize the importance of them. 3. Promote knowledge in understanding the cause and effects of discrimination and oppression. 4. Able to prepare modules and strategies for advocacy to bring sustainable social change 5. Obtain knowledge of legislative structure, frame and Process of making legislation. 6. Enriching knowledge about the importance of social legislation and the methods and models of social welfare administration
	PSCDB20 – DEVELOPMENT PLANNING	1. Investigating and understand about the importance of planning for development 2. Select Critically analyse the relevance of rural /urban/tribal administration in the context of development 3. Understand and support the relevance of participation and the tools for enhancing development 4. Demonstrate and analyse the knowledge about various schemes available for development for the people 5. Recognise and support the various importance and role of social policies in development
	PSHRA20– LABOUR LEGISLATIONS	1. Attain knowledge on labour legislation and labour welfare. 2. Understand the legal provisions relating to labour welfare in different industries. 3. Acquire the skills of working with organized sectors. 4. Examine the existing structures of industrial and labour judicial system in India 5. Acquire attitudes that are apt in the practice of labor welfare and labour law.
	PSHRB20 – HUMAN RESOURCES MANAGEMENT	1. Contribute to the development, implementation and evaluation of employee recruitment, selection and retention plans and processes. 2. Gain knowledge on corporate culture related to social issues in the work place. 3. Acquire the skills of comprehending a multi-stakeholder perspective in viewing workplace issues 4. Research and analyse information needed and apply current and emerging information technologies to support the human resources function. 5. Develop implement and evaluate organizational development stratigies aimed at promoting organizational effectiveness.

	PSMSA20 - MEDICAL SOCIAL WORK	1. Understand the various dimensions of health to help people with illness manage the psycho-social impact of the same on their lives 2. Acquire skills to contribute in a multidisciplinary team to provide the psycho- social dimension of the medical condition affecting the patient and his/her family 3. Enhance their ability to identify and arrange community supports and resources to facilitate discharge from hospital/transfer to alternate care 4. Provide support to patient and family during grief, mourning and be able to counsel patients facing death 5. Enhance their ability to identify and arrange community supports and resources to facilitate discharge from hospital/transfer to alternate care
	PSMSB20 - INTRODUCTION TO PSYCHIATRY AND MENTAL HEALTH	1. Understand the context of practice of Psychiatric Social Work 2. Learn and understand the concept of mental disorders and their management 3. Acquire skills to identify, understand and assess mental disorders 4. Gain competencies in knowledge, skills and attitude in managing mental disorders through understanding and practice of Psychiatric Social Work approaches 5. Appreciate the importance and role of psychiatry social worker in development
	PESWE20 - ELECTIVE III A: PROJECT FORMULATION	1. Develop and support the basic concepts and nature of the project proposal. 2. Support to Strengthen the individual to work with research. 3. Understand about the community, different strategies and problem analysis techniques. 4. Acquire skills of planning and know about the different types of project appraisals.
	PISWC20- IEC-COUNSELLING	1. Understand the basics of counseling and Guidance 2. Able to develop application of various counseling techniques with special groups 3. Understand linkages of Counseling and Guidance in Social Work 4. Demonstrate knowledge and skills related to building, maintaining, and utilizing counseling relationship to address mental health issues and meet client goals.
	PCSWJ20 – CONCURRENT FIELD WORK III	1. Demonstrate ability to analyse the social situations of individuals, groups and communities 2. Evaluate and Understand the role of organisations and Practice the values, principles and ethics in fields of Social Work 3. Organise Work and Develop competency in identifying and applying the different

		methods of Social Work appropriately 4. Identify and Develop an individual, group and community problems through the application of Social Work skills 5. Demonstrate competency in planning, identifying and mobilising resources to organiseprogrammes and meet needs of different target groups 6. Identify, develop and utilise one's potential for personal and professional growth
	PSCDC20 – URBAN COMMUNITY DEVELOPMENT	1. In-depth knowledge of urbanization and its effects 2. Obtain knowledge of the various methods, Programs, strategies and development effort towards Urban Community Development 3. Understand the role and contribution of professional social work in the development process. 4. Identifying the community development challenges facing urban and regional communities 5. Analyze the roles of social justice and diversity in communities, cities and regions 6. Demonstrate the ability to work in team settings and collaborate with community Groups 7. Assess and apply relevant solutions for complex urban community problems
	PSCDD20 – ENTREPRENEURSHIP DEVELOPMENT	1. Analyse, Promote and develop entrepreneurial skills to craft innovative responses to social problems 2. Recognise, evaluate the opportunities, explore innovative approaches, mobilize resources, manage risks, and build viable social enterprises 3. Understand ,Apply social entrepreneurship to both profit and non-profit firms to create social value 4. Develop analytical skills and understand professional social work in the field of Entrepreneurship. 5. Analyse ,Build, apply the knowledge, skills, and attitudes necessary for responding successfully.
	PSHRC20– LABOUR WELFARE AND INDUSTRIAL RELATIONS	1. Acquire a global as well as a local perspective on Industrial relations and trade unions. 2. Sensitized to adopt suitable attitude to practice Industrial Relations 3. Acquire appropriate and professional skills required for Industrial relations 4. Attain knowledge on various statutory and legal aspects.

		5. Acquire interpersonal relationship and negotiation skills
	PSHRD20 – ORGANIZATIONAL BEHAVIOUR	1. Analyse individual and group behavior and understand the implications of organizational behavior on the process of management 2. Identify different motivational theories and evaluate motivational strategies used in a variety of organisational settings. 3. Evaluate the appropriateness of various leadership styles and conflict management strategies used in organizations. 4. Explore managerial and interpersonal skills in presenting a new perspective for management. 5. Explain how organizational change and culture affect working relationships within organization 6. Examine the culture of the organization for better individual behavior in an organization.
	PSMSC20 - REHABILITATION STRATEGIES AND TECHNIQUES	1. Learn and understand professional rehabilitation strategies and techniques. 2. Understand the importance of social work profession in rehabilitation. 3. Examine the role of social workers in the field of rehabilitation. 4. Analse the legal status and the welfare schemes for the specially challenged. 5. Acquire professional skills to examine and assess clients with major disabilities.
	PSMSD20 - PSYCHIATRIC SOCIAL WORK	1. Emphasize the provision of competent, ethical clinical competencies of social work 2. Examine the application of counseling with various issues. 3. Sensitized with attitudes and skills required for the practice of counseling. 4. Explore the emerging trends in the care of Psychiatric social work. 5. Examine the legal aspects in the Psychiatric settings.
	PESWG20– ELECTIVE IV A: ADMINISTRATION OF SERVICE ORGANIZATION	1. Understand and support about the concepts of social welfare and social welfare administration 2. Learn and develop the knowledge on actual structure and components of welfare administration. 3. Understand and evaluate the relevance of social welfare administration for social workers. 4. Analyse ,Gain knowledge on office procedures, Ngo's and role of social worker in administration settings.

	PISWD20 -IEC- SOCIAL WORK PROFESSION IN DIFFERENT SETTINGS	1. Gain a opportunity in understanding and apply in contemporary fields of social work profession. 2. Able to influence the practices and the professional skills of social worker in different settings like individual, groups, community, Hospital settings, correctional settings and vulnerable groups. 3. Understand a roles and functions of social work profession in field. 4. Gain and understand the knowledge about various national and international agencies.
	PCSWK20- RESEARCH PROJECT	1. After completion of the course the students will be able to attain the following outcomes. 2. Undertake a research study independently 3. Apply research tools, techniques and statistics to conduct research 4. Develop skills in analysing the data collected. 5. Able to develop report writing skills and helpful for future research purpose
	PCSWL20- CONCURRENT FIELD WORK IV	1. Demonstrate ability to analyse the social situations of individuals, groups and communities 2. Understand the role of organisations and Practice the values, principles and ethics in fields of Social Work 3. Work and Develop competency in identifying and applying the different methods of Social Work appropriately 4. Identify and facilitate solutions of individual, group and community problems through the application of Social Work skills 5. Demonstrate competency in planning, identifying and mobilising resources to organize programmes and meet needs of different target groups 6. Identify and utilise one's potential for personal and professional growth

B.Sc Psychology	General psychology - I	1. Understand the origin of psychology as science and acquire knowledge of the various methods used in psychology to understand human behaviour 2. Define concepts and explain sensation, perception and attention 3. Demonstrate the structural features of Consciousness 4. Explain role of Learning, and compare various theories of learning 5. To understand the fundamental processes of Memory
	Biological Psychology - I	1. Comprehend the influence of biology on human behaviour 2. Outline the Foundations of behaviour and brain activity 3. Demonstrate the structure and functions of the Neurons 4. Explain the role of Neurotransmitter 5. Demonstrate the structure and functions of the development of the central nervous system 6. To understand the influence of various hormones on behaviour
	General Psychology - II	1. Understand the basic aspects of thinking and behaviour 2. Demonstrate the process of motivation and frustration 3. Explain the underlying principles of physiological of emotion and stress 4. Elaborate on the attributes of creativity and Intelligence 5. Compare and contrast the various approaches of personality
	Biological Psychology - II	1. Explain the Circadian rhythms, sleep and dreaming patterns 2. Demonstrate the brain development 3. Understand the biological the biological basis of thirst and hunger 4. Elaborate biological basis of emotions 5. Explain biological basis of Learning and memory

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