



## AUXILIUM COLLEGE (Autonomous)

(Accredited by NAAC with A+ Grade with a CGPA of 3.55 out of 4 in the 3<sup>rd</sup> cycle)  
Gandhi Nagar, Vellore – 6.

Curricula developed and implemented have relevance to the local, national, regional and global developmental needs which is reflected in Programme outcomes (POs), Programme Specific Outcomes (PSOs) and Course Outcomes (COs) of the Programmes offered by the Institution.

### FOCUS: NATIONAL NEEDS

Programme	Course Code	Title of Course	Description	PO	PSO	CO
B.A. English	USEND520	SBE Theatre and Dramaturgy	The course aims to inform and educate students/learners on the theatrical traditions of Indian Performing Arts dating back to the 2nd century BCE	Attain knowledge and understand the principles and concepts in the respective discipline.	Formulate research questions and identify relevant approaches and sources to find answers/solutions for questions/problems related to Language, Communication, Art and Culture.	Discuss theatre as a form of art referring to Classical, British, American and Indian stages
B.A. English	UEENC20	Elective II A Women's Writing	The course aims to sensitize students on gender equality by familiarizing them with literary texts written by women that address the subordination, discrimination and objectification of women, across the globe and the Indian subcontinent	Emulate positive social values and exercise leadership qualities and team work.	Appreciate life, think critically, and develop positive, interpersonal relationship with fellow humans	Evaluate the works by women for its political and social relevance

B.A. English	UCENC20	Indian Writing in English	The course is focused on familiarizing students on the unique merits of Literature in English (available as original literary works or through English translation) produced by Indian writers and writers of Indian origin and imbibe the literary and social values that emanate from them	Attain knowledge and understand the principles and concepts in the respective discipline, appreciate biodiversity and enhance eco-consciousness for sustainable development of the society.	Appreciate life, think critically, and develop positive, interpersonal relationship with fellow humans	Appreciate the diverse themes which are intrinsic to Indian culture Appraise translated texts from the regional languages of India for their indigenous sensibilities.
B.A. English	UEENA20	Indian Writing in Translation	The course attempts to direct the critical attention of students towards the literature in Indian languages especially the regional literature of India and orient the learners to learn relevant and suitable methods to appreciate and analyse literature in translations	Attain knowledge and understand the principles and concepts in the respective discipline.	Remember the principles of Literature in general and English Literature in particular and understand its typological, critical, socio-cultural aspects	Appreciate the diversity of literary and social voices within and sometimes marginalized by those traditions. Analyse the “Indian-ness” and the writing style of the native writers.
B.A. English	UATOT20	Allied IV Techniques of Translation	The course aims to equip students with the knowledge and skills required to do, analyse and build	Attain knowledge and understand the principles and concepts in the respective discipline.	Remember the principles of Literature in general and English Literature in particular and	Apply theoretical approaches to translate literary and non-literary texts, Analyze the practicality of

			methods and models for literary translations	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	understand its typological, critical, socio cultural aspects, Apply the knowledge of form, structure, history and contextual cultural diversity and comprehend the applications of the English Language in practice, Discern avenues for higher learning, career options, and venture entrepreneurship	translation and use it to develop awareness of academic writing requirements. Evaluate the translated and original texts.
B. A History	UCHIA20	Main Currents in Indian History from early times to 1526 A. D	To make them understand the early History and History of India and the various dynasties ruled and their contribution for the various developments	Emulate positive social values and exercise leadership qualities and teamwork	Develop a critical approach to the study of History and effectively communicate the values and ideas of the leaders to the Society and become the Agents of social change.	.Discuss the origin of various Dynasties that ruled India and understand the concept of invasion and to exercise leadership qualities and teamwork
B. A History	UCHIB20	Main Currents in Indian History from 1526 A.D to 1707 A. D	To Enable the Students to Assimilate the Socio-Economic-Cultural Condition of India at the time of the Mughals and their contribution to Art and Architecture.	Attain knowledge and understand the principles and concepts in the respective discipline	Widen their knowledge of History, Administration, Art, Architecture, political system, Religion, and culture and enhance their critical and creative skills to pursue career options	Compare Mughal Art and Architecture with Modern Art.

					to engage as educators and researchers in historical sites and Museums	
B. A History	UCHIC20	History of India from 1707 to 1858 A. D	To help the student to grasp the Administration and Reforms of British under East India Company	Acquire and apply analytical, critical and creative thinking and problem-solving skills	Develop a critical approach to the study of History and effectively communicate the values and ideas of the leaders to the Society and become the Agents of social change.	Classify the Reforms of Lord Dalhousie and its impact in the Indian administration for the betterment of the future
B. A History	UCHID20	History of India from 1858 to 1950 A. D	To enable the students to Understand the various factors leading to the rise of the National Movement and the role of Mahatma Gandhi in the Freedom Struggle	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society	Acquire the social values that indwell in History to become the leaders of politics and commit to work for social justice, peace, and sustainable development	Explain the role of M.K. Gandhi in Freedom Struggle and understand the concepts in various Acts and to commit oneself for Social Justice and exercise leadership and Teamwork
B. A History	UCHIG20	Contemporary India from 1947 A.D to 2000A.D	To help the students to understand the role of Prime Ministers in Policy Making and their International Relations.	Emulate positive social values and exercise leadership qualities and teamwork	Develop a critical approach to the study of History and effectively communicate the values and ideas of the leaders to the Society and become the Agents of social change.	Analyze the internal development of India during Indira Gandhi and Janata Rule

B. A History	UCHIM20	Indian Polity and Constitution	To enhance the student's role as enlightened citizens and make the learners aware of their rights and duties	Attain knowledge and understand the principles and concepts in the respective discipline	Develop a critical approach to the study of History and effectively communicate the values and ideas of the leaders to the Society and become the Agents of social change.	Analyze the internal development of India during Indira Gandhi and Janata Rule
B. A History	UCHIJ20	Indian Archeology	To help the students to understand the contribution of Western Archaeologists to Archaeology	Acquire and apply analytical, critical and creative thinking and problem-solving skills	Develop a critical approach to the study of History and effectively communicate the values and ideas of the leaders to the Society and become the Agents of social change.	Analyze the internal development of India during Indira Gandhi and Janata Rule
B.B.A	UCBAA20	Principles of Management	Course designed to meet the fundamental concepts of management, functions and its principles	To attain knowledge and understand the managerial principles and concepts of the course adopted.	To attain the ability to be self-directed towards their career and contribute to the society as responsible citizens.	Acquire the knowledge related to management concepts and its principles
B.B.A	UABUA20	Business Communication	Course depicts the basic concepts of communication process	Communicate the general ideas, opportunities and opinions and to become empowered and motivated citizens of the country.	Acquire the basic and managerial communications skills to gain professionalism.	Impart the importance of Communication and to understand the concepts of Communication.

B.B.A	UCBAC20	Organisational Behaviour	Know the fundamental concept of Organizational Behaviour	Adapt towards the positive thinking capacity, to adapt the social values, to exercise leadership qualities and bringing out their capabilities through team work	To get an exposure by applying the theoretical knowledge into practice by carrying out the institutional training and projects in the organizations.	Assess the attitudinal and motivational behaviour and group dynamics of an individual
B.B.A	UABEA20	Business Environment and Ethics	To know about the environment and its impact on business. Recognize the importance of business ethics and social responsibility in today's business	Mold the students to face the challenges in the global business environment and the society.	To attain the ability to be self-directed towards their career and contribute to the society as responsible citizens.	To know about the environment and its impact on business To recognize the importance of business ethics and social responsibility as an individual to the society
B.B.A	UCBAE20	Marketing Management	Course comprehend the principles, concepts and functions of marketing and to design a marketing strategy for a dynamic marketing and attain the knowledge of Marketing Mix	Mold the students to face the challenges in the global business environment and the society.	Acquire the basic and managerial communications skills to gain professionalism.	Learn the recent trends in marketing
B.B.A	UCBAF20	Financial Accounting	Course highlights the fundamentals of accounting.	Prepare the students to be persistent enough to pull out their own ideas and opinions and to become a strong	Acquire the ability to be a future leader, manager and an entrepreneur reflecting ethical and social	Give them a basic knowledge of accounting principles and practices

				pillar to the family and society highlighting their feminine power.	values.	
B.B.A	UAEBA20	Economics for Business	Course understand the economic concepts and techniques in evaluating business decisions	Attain knowledge and understand the principles and concepts in the respective discipline.	To attain knowledge and understand the managerial principles and concepts of the course adopted.	Have depth knowledge in the basics of Managerial Economics
B.B.A	UEBAB20	Logistics and Supply Chain Management	To familiarize the students with the basic concepts of logistics and supply chain management	To be stimulated towards the change and to be conscious for sustainable development of the society	To acquire the ability to be a future leader, manager and an entrepreneur reflecting ethical and social values.	Be enriched about the activities involved in distribution network planning and Integrated Supply Chain Management
B.B.A	UCBAH20	Cost and Management Accounting	To enable the students, understand the concept of Management and Cost Accounting	Prepare the students to be persistent enough to pull out their own ideas and opinions and to become a strong pillar to the family and society highlighting their feminine power.	Acquire the ability to be a future leader, manager and an entrepreneur reflecting ethical and social values.	Gain knowledge on the concepts of management and cost accounting techniques
B.B.A	UCBAJ20	Research Methodology	To understand the basic concepts of research	To formulate, to apply the theoretical knowledge into practice by carrying the institutional training and projects, to adopted sense of creative thinking and learn problem	To get an exposure by applying the theoretical knowledge into practice by carrying out the institutional training and projects in the organizations	.Know the general definition of research and qualities of research. . Be able to write report and do statistical analysis



				solving skills to take up challenges faced in today's modern world.		
B.B.A	UCBAK20	Human Resource Management and Development	Course designed to understand the various HR functions like Recruitment, selection, training process and also about performance appraisal.	Mold the students to face the challenges in the global business environment and the society.	To acquire the ability to be a future leader, manager and an entrepreneur reflecting ethical and social values.	Attain the knowledge of the various HR functions and its importance
B.B.A	UAITR20	Institutional Training	Course designed to demonstrate the capability of the student in studying the organization and its process in totality.	To formulate, to apply the theoretical knowledge into practice by carrying the institutional training and projects, to adopted sense of creative thinking and learn problem solving skills to take up challenges faced in today's modern world.	To get an exposure by applying the theoretical knowledge into practice by carrying out the institutional training and projects in the organizations.	The students can acquire the capability of applying the theoretical knowledge into practice covering Production, Human resource, Finance and Marketing to carry out her institutional training with the approval of the department
B.B.A	UCBAL20	Financial Management	Course enable the learners to understand concept of financial management, scope, objectives and time value of money.	To communicate the general ideas, opportunities and opinions and to become empowered and motivated citizens of the country.	To acquire the ability to be a future leader, manager and an entrepreneur reflecting ethical and social values.	Be well-versed in the financial decision, functions and organisation of financial managements



B.B.A	UCBAM20	Industrial Relations	Course is designed to cover the basic concepts of Industrial Relations	Mold the students to face the challenges in the global business environment and the society.	To acquire the ability to be a future leader, manager and an entrepreneur reflecting ethical and social values.	Understand the basic concepts of Industrial relations like payment of wages act, factories act, maternity act, Industrial disputes act, Employees state insurance act.
B.B.A	UCBAN20	Banking and Insurance	Course impart the knowledge of banking system and its services	To bring up the economically challenged, socially backward young women to be competent with today's expectation of the competitive world for their sustenance	To attain the ability to be self-directed towards their career and contribute to the society as responsible citizens.	Gain the knowledge as to how to open and operate accounts in bank and also maintaining relationship with bankers
B.B.A	UCBAR20	Project	Course is designed to make the students identify a problem in the organization based on the area of specialization and provide solutions and suggestions to the management.	To formulate, to apply the theoretical knowledge into practice by carrying the institutional training and projects, to adopted sense of creative thinking and learn problem solving skills to take up challenges faced in today's modern world.	To get an exposure by applying the theoretical knowledge into practice by carrying out the institutional training and projects in the organizations.	Course includes field studies, surveys, interpretation, planning and designing of the Research Methodology presented in a comprehensive manner with recommendations for solutions based on scientifically worked out data.

B.B.A	UCBAS20	Legal aspects of Business	Course designed to make the students learn the fundamental principles underlying in the law of contract.	To bring up the economically challenged, socially backward young women to be competent with today's expectation of the competitive world for their sustenance	To acquire the ability to be a future leader, manager and an entrepreneur reflecting ethical and social values.	Be thorough in the contractual relationships in business
B.B.A	UCBAT20	Production and Materials Management	The Course enable the students to understand the concept of production management, plant location and plant layout	To communicate the general ideas, opportunities and opinions and to become empowered and motivated citizens of the country.	Acquire the ability to be a future leader, manager and an entrepreneur reflecting ethical and social values.	Understand the concepts of production management, plant location and plant layout
B.B.A	UEBAC20	Total Quality Management	Course is designed to make the students understand the concepts of total quality management	To communicate the general ideas, opportunities and opinions and to become empowered and motivated citizens of the country.	To attain the ability to be self-directed towards their career and contribute to the society as responsible citizens.	Evaluate the principles of quality management and to explain how these principles can be applied within quality management systems
B.B.A	UEBAD20	Entrepreneurial Development	Course is designed to develop entrepreneurial way of thinking	To pursue higher knowledge, acquire quality professional education, and to develop entrepreneurial skills and contribute towards the needs of the society	Acquire the ability to be a future leader, manager and an entrepreneur reflecting ethical and social values.	Have the ability to discern entrepreneurial traits

B.B.A	UGBAA520	Human Resource Management	The course is designed to understand the basic concepts of HRM	To bring up the economically challenged, socially backward young women to be competent with today's expectation of the competitive world for their sustenance	To attain the ability to be self-directed towards their career and contribute to the society as responsible citizens.	Integrate the knowledge of HR concepts
B.B.A	USBAF520	Application of GST	Course is designed to enable the students to learn the concepts of GST from the pre-GST period to post- GST period	To be passionate about multi-disciplinary approach for problem solving, critical analysis and decision making in their personal and professional life	To attain the ability to be self-directed towards their career and contribute to the society as responsible citizens.	Enable the students to learn the concepts of GST from the pre-GST period to post- GST period
B.B.A	USBAE520	Campus to Corporate	Course is designed to build confidence, develop self-esteem, and to bring positive changes in the attitude & behaviour of the students	To bring up the economically challenged, socially backward young women to be competent with today's expectation of the competitive world for their sustenance	To acquire the basic and managerial communications skills to gain professionalism.	Proactively manage the transition from being the student to the employee

B.B.A	USBAA120	Life Style Management	Course is designed to understand the concept of self-management	Adapt towards the positive thinking capacity, to adapt the social values, to exercise leadership qualities and bringing out their capabilities through team work	To attain the ability to be self-directed towards their career and contribute to the society as responsible citizens.	Be equipped with the talent of self-management
B.B.A	USBAB120	Winning Through Communication	Course is designed to understand the concept in communication	Adapt towards the positive thinking capacity, to adapt the social values, to exercise leadership qualities and bringing out their capabilities through team work	Acquire the basic and managerial communications skills to gain professionalism.	To understand the role of communication in Personal and Professional success
B.B.A	USBAD320/ USBAD420	Hotel Planning and Administration	Course is designed to develop a conceptual understanding of the Hotel Planning and Administration	To formulate, to apply the theoretical knowledge into practice by carrying the institutional training and projects, to adopted sense of creative thinking and learn problem solving skills to take up challenges faced in today's modern world.	Acquire the basic and managerial communications skills to gain professionalism.	Understand the concepts in Hotel Planning and Administration

B.B.A	USBAC320// USBAC420	Hospital Planning and Administration	Course enable the students to understand the planning of Modern Hospital	To formulate, to apply the theoretical knowledge into practice by carrying the institutional training and projects, to adopted sense of creative thinking and learn problem solving skills to take up challenges faced in today's modern world.	Acquire the basic and managerial communications skills to gain professionalism.	Be familiarized with Organization Structure and Medical Records of a Hospital
B.C.A	USCAA320	SBE Accounting Software	To develop computer skills of recording financial transactions, preparation of annual accounts and reports using Tally.	Effectively communicate general and discipline-specific information, ideas and opinions.	Acquire skills in computer and information technology and also be competent in the field of Commerce, Mathematics and Management.	Understand the basics in Tally and company creation Creating vouchers, ledgers accounts, Balance S. Demonstrate Profit and Loss Account and Reconciliation of the bank account. Create company accounts that use various functions like Cost Category and Cost Centre. Learn to apply the tools & techniques in the interpretation of data for managerial decision – making.

B.Com	UCCOA 20	Principles of Accounting I	National level accounting standards can be followed by analyzing the basic principles	Employability Skills in theoretical and practical knowledge gained over the years in the field of auditing	Practical Applications gained over the year in the field of auditing	Gain Knowledge about the basic accounting principles, concepts and conventions
B. Com	UCCOC 20	Principles of Accounting II	National level accounting standards can be followed by analyzing the basic principles	Employability Skills in theoretical and practical knowledge gained over the years in the field of auditing	Practical Applications gained over the year in the field of auditing	Gain Knowledge about the basic accounting principles, concepts and conventions
B. Com	UCCOE 20	Financial Accounting, I	Gained knowledge on accounting treatment to be applied in various	Apply ethical principles in promoting values and attitudes and become responsible towards the practice of accounting norms.	Develop in their professional career through lifelong learning and excel as the fellow associates in the field of company secretaryship, chartered accountancy and business administration.	Students were well versed in the methods of recording the Investment Accounts.
B. Com	UCCOO20	Corporate Accounting II	Gained in depth knowledge and analyzing corporate accounting	Apply ethical principles in promoting values and attitudes and become responsible towards the practice of accounting norms	Develop in their professional career through lifelong learning and excel as the fellow associates in the field of company secretaryship, chartered accountancy and business	It also helps students to give practical knowledge of company accounts

					administration.	
B. Com	UCCOP20	Management Accounting II	Gained knowledge on accounting treatment to be applied in various aspects	Apply ethical principles in promoting values and attitudes and become responsible towards the practice of accounting norms	Develop in their professional career through lifelong learning and excel as the fellow associates in the field of company secretaryship, chartered accountancy and business administration.	To impart practical applications of marginal costing
B. Com	UCCOQ20	Income Tax Law and Practice II	Gained practical knowledge on filing of returns of income.	Apply ethical principles in promoting values and attitudes and become responsible towards the practice of accounting norms	Apply the practical knowledge gained over the years in the field of auditing, tax filing, share market and other finance related services	To make the students learn the importance of Computation of Total Income and Tax Liability of Individuals
B.Com	UCCOR20	Practical Auditing	Acquired practical knowledge of auditing	Apply ethical principles in promoting values and attitudes and become responsible towards the practice of accounting norms	Apply the practical knowledge gained over the years in the field of auditing, tax filing, share market and other finance related services	Students were familiarized with the preparation of audit programmes for various situations.
B.Com	UGCOA520 / 620	NME Book Keeping and Accounting	Acquired conceptual knowledge on accounting rules and its concepts.	Apply ethical principles in promoting values and attitudes and become responsible towards the practice of accounting norms	Practical Applications gained over the year in the field of auditing	To impart the learners the need for journal, ledger and preparation of trial balance.



B. Com	UCCOJ20	Law of Contracts II	theoretical knowledge on sale of goods act & company's act	Function effectively as an individual and as a member or leader in teams strengthening group dynamics to achieve the common goals of the organisations.	Cater to the needs of the industry/society so as to contribute for the development of the nation.	To have in-depth knowledge on the internal affairs of the companies
B. Com	UCCOH20	Financial Accounting II	Students gained knowledge on applying the various concepts relating to accounts	Apply ethical principles in promoting values and attitudes and become responsible towards the practice of accounting norms	Exercise leadership qualities and moral values through ethical ways with the concern for the society and the environment with team spirit to adapt to change throughout their professional career.	To acquaint students with the partnership principles, concepts and their applications in different situations and conditions of partnership business
B. Com	UCCOI20	Methods of Cost Accounting	Students are able to differentiate, analyze and reconciliation statement.	Function effectively as an individual and as a member or leader in teams strengthening group dynamics to achieve the common goals of the organisations.	Cater to the needs of the industry/society so as to contribute for the development of the nation.	To introduce to the students the methods of process costing
B. Com	UCCOL20	Corporate Accounting, I	To provide in depth knowledge on various accounting valuation of goodwill and shares	Enhance the theoretical and practical knowledge gained in the field of auditing, tax filing, and share market.		It Provide the Knowledge of Issue of Share and Issued of Debentures etc.

B. Com	UCCOM20	management Accounting, I	Impart knowledge on management accounting system to the students and to teach the analytical tools applied in companies	excel as a socially committed individual having empathy for the needs of the society through value-based education.	Exercise leadership qualities and moral values through ethical ways with the concern for the society and the environment with team spirit to adapt to change throughout their professional career.	To impart knowledge on management accounting system to the students and to teach the analytical tools applied in companies.
B. Com	UCCON20	Income Law and Practice II	To enable the students, learn the basic concepts of Income Tax	Enhance the theoretical and practical knowledge gained in the field of auditing, tax filing, and share market.	Cater to the needs of the industry/society so as to contribute for the development of the nation.	To examine the provisions relating to Income from Business or Profession.
B.Sc. Biochemistry	UCBCA20	Bioorganic Chemistry	To provide a clear note on the bioorganic compounds.	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	Outline the structure, properties and biological importance of carbohydrates.
B.Sc. Biochemistry	UCBCC20	Main Practical-I	To provide a wide practical knowledge on Qualitative and Quantitative Analysis.	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	Analyses quantitatively the biomolecules and mineral components

B.Sc. Biochemistry	UCBCB20	Cell Biology	To provide a deep knowledge about cell – the basic unit of life.	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	Recall on the components of cell membrane and its role in maintaining cell function
B.Sc. Biochemistry	UCBCD20	Biochemical techniques	To study about the principles and applications of biochemical techniques.	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	Compare natural and artificial radiation source and its importance
B.Sc. Biochemistry	UCBCE20	Physiology and Nutrition	To understand the homeostatic mechanism of each organ.	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	Describe the basic components and functions of the digestive system
B.Sc. Biochemistry	UCBCF20	Main Practical-II	To inculcate practical skill in Biochemistry.	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	Analyses quantitatively the biomolecules and mineral components

B.Sc. Biochemistry	USBCBn20	Skill Based Elective Health Care for Women	To provide awareness about common health problems of women and how to overcome certain diseases	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	Outline the Stages of women hood
B.Sc. Biochemistry	UCBCG20	Enzymes & Intermediary metabolism	To impart knowledge about the enzymes and the metabolism of biomolecules and its interrelationship.	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	Discuss the kinetics of enzyme catalyzed reactions, enzyme immobilization and applications of enzymes and their future potential
B.Sc. Biochemistry	UCBCH20	Endocrinology	Endocrinology describes in detail the role of endocrine glands, their secretion and its regulatory effect on metabolic activities to maintain homeostasis.	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	Identify the various endocrine glands, morphology and their relevant hormones secreted
B.Sc. Biochemistry	UEBCA20	Elective IA Immunology	To help the students to understand the components of Immune system	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	Discuss the basic techniques of antigen and antibody interactions

B.Sc. Biochemistry	UEBCB20	Elective IB Environmental Toxicology	To understand the basics in toxicological aspects that effect the environment.	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	Discuss the role of poison information services and systems for the surveillance of Poisoning
B.Sc. Biochemistry	UCBCJ20	Main Practical-III	The course is aimed to enhance the practical skill of the student in handling and estimating the components present in the biological samples.	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	Apply the safety measures in the laboratory
B.Sc. Biochemistry	UCBCK20	Main Practical-IV	The course is aimed to enhance the practical skill of the student in handling and estimating the components present in the biological samples.	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	Apply the safety measures in the laboratory
B.Sc. Biochemistry	USBCCn20	Skill Based Elective III Entrepreneurial Biochemistry	To understand the concept of entrepreneurship	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	Explore and experience the joy of creating small business ideas

B.Sc. Biochemistry	UCBCI20	Molecular Biology	To make a study on life and the information centers called genes.	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	Demonstrate the features of Genetic code and mechanism of Translation
B.Sc. Biochemistry	UEBCC20	Elective IIA Clinical Biochemistry	To understand the biochemical basis of various diseases and disorders	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	Compare the application of diagnostic enzymes
B.Sc. Biochemistry	UEBCD20	Elective IIB Pharmacology	To make detailed study of drugs, and their actions on living systems	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	Discuss the basic understanding of detoxification mechanisms
B.Sc. Biochemistry	UEBCE20	Elective IIIA Biotechnology	To explore the applications and future potential of Biotechnology	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	Identify and debate the ethical and social issues in the field of biotechnology and get insight in application of rDNA technology

B.Sc. Biochemistry	UEBCF20	Elective IIIB Plant Biochemistry	To explore the applications of plant and their products	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	Create the impact of nitrogen, Sulphur and carbon cycle on nature
B.Sc. Biochemistry	USBCDn20	Skill Based Elective IV- Medical Laboratory Technology	To make detailed study of the organization and functions of a laboratory	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	Apply histopathological techniques in detecting abnormal cells
B.Sc. Biochemistry	USBCAn20	Skill Based Elective II Nutritional Biochemistry	To make a note on nutrients and its role on metabolism.	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	Use a balanced diet for diseased conditions
B.Sc. Biochemistry	UABCA20	Allied Biochemistry I	To acquire knowledge on the structure and the function of biomolecules	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	List out the structural components, properties and biological importance of nucleic acids.



B.Sc. Biochemistry	UABCB20	Allied Biochemistry II	To understand the basic of metabolic pathway	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	Gain knowledge of intermediary metabolism and regulation of individual metabolism
B.Sc. Biochemistry	UABCC20	Allied Biochemistry Practical	To acquire knowledge on the structure and the function of biomolecules	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	Outline the various techniques adopted for separation of biomolecules
B.Sc. Biochemistry	UGBCAn20	NME Disease and Treatment	To provide a basic knowledge about common diseases and its treatment.	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	Acquire a broad knowledge about the deadliest diseases in the world
B.Sc. Biochemistry	UCBCBn20	NME Therapeutic Agents	To impart knowledge on action of drugs in treating diseases.	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Function effectively as a member or leader in a team and demonstrate professional ethics, Community living and Nation building initiatives	Utilize the importance of first aid in accidents to preserve life

B.Sc. Chemistry	UCCHA20	General Chemistry – I	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small-Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	Recall and understand the concepts of valency, oxidation and reduction, classify the elements in the periodic table and explain the periodicity of properties. Recall the concepts and theories of acid base, buffer solutions, understand the principle of inorganic qualitative analysis and apply it in practical's. Apply IUPAC nomenclature in naming organic compounds and the concept of hybridization to identify the geometry and shape of the simple organic molecules. Analyse and apply the concepts of liquid and gaseous states. Recall the concepts of classical and quantum mechanics and solve related problems.
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B.Sc. Chemistry	UCCHC20	Practical I Inorganic Qualitative Analysis	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small-Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	Recall and understand the concepts of valency, oxidation and reduction, classify the elements in the periodic table and explain the periodicity of properties. Recall the concepts and theories of acid base, buffer solutions, understand the principle of inorganic qualitative analysis and apply it in practical's. Apply IUPAC nomenclature in naming organic compounds and the concept of hybridization to identify the geometry and shape of the simple organic molecules. Analyse and apply the concepts of liquid and gaseous states. Recall the concepts of classical and quantum mechanics and solve related problems.
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B.Sc. Chemistry	UCCHB20	General Chemistry – II	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	Illustrate the different types of bonds with examples and apply the knowledge of VSEPR theory to determine geometries of molecules. Interpret the molecular orbital theory of homo and hetero nuclear diatomic molecules, compare the chemical and physical properties of alkali metals and their compounds and understand the chemistry of lithium. Analyse and apply the electronic displacement effects, reactions, generation, structure and stability of reaction intermediates. Examine and analyse the reactions and mechanisms of alkanes, alkenes, dienes and alkynes. Analyse the laws and concepts of ideal and non-ideal solutions, mesomorphic and colloidal states.
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B.Sc. Chemistry	UCCHC20	Practical I Inorganic Qualitative Analysis	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small-Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	Recall the principles of inorganic qualitative analysis. Apply the concepts of semimicro analysis in inorganic qualitative analysis. Develop skill to analyse systematically the given inorganic mixture and identify the acid and basic radicals. Understand the importance of eliminating the interfering radical. Eliminate the interfering acid radical for group separation and identification of basic radicals.
B.Sc. Chemistry	UCCHD20	General Chemistry – III	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry,	Define and calculate equivalent weights and concentration terms and explain the principles of volumetric analysis, and illustrate the theories of different types of titrations and

				problem-solving skills	Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small-Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	indicators. Discuss the trend in periodicity of Beryllium, Boron and Carbon family elements and their compounds. Describe the methods of preparation and properties of cycloalkanes, dicarboxylic acids and carbonyl compounds, and apply the concept of acidity and acid strength of carboxylic acids. Describe the methods of preparation and properties of alcohols, ethers and epoxides. Elaborate the basic concepts of solid-state chemistry including solid state defects and semiconductors.
B.Sc. Chemistry	UCCHF20	Practical – II Volumetric Estimation	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry,	Use double titration method in volumetric analysis. Prepare standard solutions. Apply volumetric principles to carry out acid-base titrations, complex metric titrations,

				problem-solving skills	Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small-Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	precipitation titration and redox titrations like permanganometric, dichrometry and iodometric titrations.
B.Sc. Chemistry	USCHA320	Skill Based Elective – III Industrial Chemistry	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small-Scale Chemistry. Apply laboratory skills, carry out experiments, record	Discuss the composition, characteristics and manufacture of various industrial products. (Polymer, Leather, Textile, Glass, Ceramics, Cements, Paints and Pigments). Explain the various process involved in the manufacture of leathers and leather products. Describe the importance of natural and synthetic fibers in textile industry.



					observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	Understand the classifications of fuels and learn the common terms related to it. Understand how to implement the concepts in industrial working environment.
B.Sc. Chemistry	UCCHE20	General Chemistry – IV	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small-Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	Explain the periodic properties of Nitrogen, Oxygen and Halogen family elements and their compounds, and reason out the position of noble gases in the periodic table and describe the preparation and properties of xenon compounds. Illustrate the mechanisms of aliphatic, aromatic nucleophilic substitution and elimination reactions. Recall and apply Huckel's rule, illustrate the preparation, properties and uses of heterocyclic compounds, dihydric and trihydric phenols, and related named reactions.

						Define the terms involved in thermodynamics, the laws of thermodynamics and their developments. Describe the concept of entropy and calculate the entropy changes during various processes, and to explain the third law of thermodynamics and its applications.
B.Sc. Chemistry	UCCHF20	Practical – II Volumetric Estimation	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small-Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results	Use double titration method in volumetric analysis. Prepare standard solutions. Apply volumetric principles to carry out acid-base titrations, complexometric titrations, precipitation titration and redox titrations like permanganometric, dichrometry and iodometric titrations.

					and follow the correct procedures and regulations for safe handling and usage of chemicals.	
B.Sc. Chemistry	USCHB420	Skill Based Elective – IV Agricultural chemistry	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	Understand the scope of agriculture in India and Tamil Nadu. Explain the physical and chemical properties of soil. Describe the types of farming. Summarize the certification of organic products. Identify the benefits and adverse effects of pesticides.
B.Sc. Chemistry	UCCHG20	Inorganic Chemistry	Our curriculum meets the national standards and enables students to	Attain knowledge and understand the principles and concepts in the	Demonstrate a firm foundation in fundamentals and gain an in-depth	Discuss the general characteristics of d and f block elements, and compare the properties

			<p>pursue higher studies in higher educational institutions throughout the country.</p>	<p>respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills</p>	<p>knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small-Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.</p>	<p>of elements belonging to Ti, V, Cr, Mn and Fe groups. Summarize the various steps involved in metallurgical processes, and illustrate the preparation, properties and uses of Ti, Zr, U, Pt and Th. Recall the basic concepts of nuclear chemistry, and to explain the stability of nuclides by n/p ratio, mass defect and binding energy, packing fraction, magic numbers and natural radioactivity. Explain nuclear transmutation reactions, artificial radioactivity, nuclear fission and fusion reactions. Describe the biological importance of certain elements, chelate therapy, radio pharmaceuticals, contrast agents and toxicity of few metals.</p>
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B.Sc. Chemistry	UCCHH20	Organic Chemistry	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small-Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	Remember the concepts of stereoisomerism and apply it in identifying the configurations of the optical and geometrical isomers. Illustrate tautomerism and conformational analysis. Explain the preparation and synthetic uses of active methylene compounds, basic concepts of organic photochemistry and illustrate organic photochemical reactions. Apply the knowledge of various named reactions in organic synthesis. Summarize the different types of molecular rearrangements their mechanisms and applications.
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B.Sc. Chemistry	UCCHI20	Physical Chemistry	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small-Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	Demonstrate the plausible mechanisms based on the study of the kinetics of chemical reactions. Describe the theories developed to understand the reaction kinetics of simple and complex reactions. Explain the basic principles of photo chemistry, deduce rate laws of photochemical reactions and discuss the applications of photo physical processes. Apply Phase rule to study one component and two component systems and interpret phase diagrams. Apply the knowledge gained about catalysis and adsorption to deduce the kinetics of homogeneous and heterogeneous surface reactions.
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B.Sc. Chemistry	UECHA20	Elective I A Analytical Chemistry	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small-Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	Summarize the various steps involved in gravimetric analysis. Demonstrate the principles and techniques involved in paper, column, TLC and ion exchange chromatography and their applications. Explain the absorption laws, instrumentation and working of UV-Visible spectrophotometers. Elaborate the principle, instrumentation of IR spectroscopy for the identification of simple organic molecules. Explain the principle involved in NMR and interpret NMR spectra of simple organic compounds, describe the principle, instrumentation of Mass spectroscopy and determine the molecular formulae of simple organic molecules.
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B.Sc. Chemistry	UECHB20	Elective I B Basics of Computer Programming in C and its Applications in Chemistry	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small- Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	Define and relate software and hardware. Describe the various components of C language. Demonstrate the uses of functions, arrays and pointers. Apply C language for solving problems in chemistry. Apply C language to calculate specific terms in Chemistry.
B.Sc. Chemistry	UCCHL20	Practical III Physical Chemistry	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry,	Demonstrate practical skills in carrying out chemical reactions of different orders to arrive at reaction kinetics. Estimate quantitatively using conductometric and potentiometric



				problem-solving skills	Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small-Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	titrations Assess the meaning of values and calculations in experiments and learn the techniques of getting rate constants through graphical methods. Understand laboratory practices and safety/First aid rules. Handle electronic equipment's with technical skills
B.Sc. Chemistry	UCCHM20	Practical IV Gravimetric Estimation	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small-Scale Chemistry. Apply laboratory skills, carry out experiments, record	Quantitatively estimate metal ions using gravimetric analysis. Gain knowledge on the choice of precipitating methods, reagents, crucibles and filtration. Identify common errors in gravimetric analysis. Outline the favorable conditions for precipitation and factors affecting the particle size of the precipitate. Relate particle size of the precipitates with

					observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	choice of crucibles used in gravimetric estimations.
B.Sc. Chemistry	UCCHN20	Practical V Organic Analysis and Preparation	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	Apply the concepts of micro scale analysis in organic qualitative analysis. Develop skill to analyse systematically the given organic mixture and identify the functional group and special elements. Prepare simple organic compounds. Discuss the importance of laboratory practices and safety/First aid rules for handling the organic chemicals. Explain the significance of organic reactions to understand the theory concepts of organic chemistry.

B.Sc. Chemistry	USCHC520	SBE – V Small Scale Chemistry	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small-Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	Understand the laws, role and steps involved in starting small scale industries. Acquire skills to prepare soaps and detergents. Describe the characteristics and uses of cosmetics and perfumes. Gain skills in the manufacture of selected small-scale products.
B.Sc. Chemistry	UCCHJ20	Coordination Chemistry	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry,	Define the terms involved in coordination chemistry and recall IUPAC nomenclature of coordination compounds and to explain the concept of chelation and illustrate

				problem-solving skills	Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small-Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	the isomerism exhibited by coordination complexes. Explain and compare Werner, Sidgwick and Valence Bond theories of bonding in coordination compounds. Describe the various aspects of Crystal Field Theory and its applications. Explain the importance of MOT, construct molecular orbital diagrams and to compare MOT with CFT. Describe the synthesis, properties, uses, bonding, hybridization and structures of carbonyls of Ni, Cr, Fe, Co, Mn, Mo and W.
B.Sc. Chemistry	UCCHK20	Electro Chemistry	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry,	Apply the laws on electrolysis and definitions of specific, equivalent and molar conductance to the working of electrolytic cells. Illustrate Debye

			country.	thinking, and problem-solving skills	Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small-Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	Huckel's theory of strong electrolytes. 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. Apply chemical cells and concentration cells for determining the valency of mercurous ion, transport number, solubility and solubility product. Demonstrate the knowledge gained in the study of irreversible electrode processes. And illustrate the principle and applications of fuel cells.
B.Sc. Chemistry	UECHC20	Elective II A Chemistry of Natural Products	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry,	Explain the structural elucidation, properties and reactions of glucose, fructose, sucrose, maltose, starch and cellulose. Elaborate the preparation, properties and reactions of alpha

				problem-solving skills	Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small-Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	amino acids, synthesis of peptides and classification and structure of proteins. Explain the structure and applications DNA, RNA and processes like transcription and translation in protein synthesis. Illustrate the sources, properties and structural elucidation of alkaloids and terpenoids. Elaborate the sources, properties, structural elucidation and synthesis of flavonoids, carotenoids, anthocyanins and vitamins.
B.Sc. Chemistry	UECHD20	Elective II B Polymer Chemistry	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical	Classify polymers and determine the molecular weights of polymers by physical and chemical methods. Describe the mechanisms of different types of polymerization reactions. Summarize the types and techniques

					Chemistry, Food Chemistry and Small Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	involved in polymer degradation. Demonstrate the applications of industrial polymers and explain the role of conducting polymers. Illustrate the various polymer processing techniques.
B.Sc. Chemistry	UECHE20	Elective III A Applied Chemistry	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small-Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results	Describe the digestion and absorption of carbohydrates, proteins and fats and describe the role of enzymes and physiological functions of hormones. Recall the definition, constituents and physico-chemical properties of milk and indicate the composition of creams, butter, ghee and ice creams. Demonstrate the chief processes involved in leather manufacture and treatment of tannery effluents

					and follow the correct procedures and regulations for safe handling and usage of chemicals.	Classify and enumerate the properties of soils. Determine the physico-chemical properties of water and illustrate reverse osmosis and ion-exchange methods.
B.Sc. Chemistry	UECHF20	Elective III B Pharmaceutical Chemistry	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small-Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	Explain the basic pharmacological terms are used in pharmaceutical chemistry. Illustrate the selected Indian Medicinal plants and their uses. Elaborate the definition, properties and therapeutic uses of sulphonamides, antibiotics, antiseptics and disinfectants. Explain the role of analgesics and anesthetics. Analyse the causes, symptoms and drugs used for the treatment of Cancer, AIDS, Epilepsy and Hypertension 5. Summarize the characteristics and classifications of cardiovascular drugs.



						Identify the common organic pharmaceutical aids.
B.Sc. Chemistry	UCCHL20	Practical III Physical Chemistry	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate a firm foundation in fundamentals and gain an in depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	<p>Demonstrate practical skills in carrying out chemical reactions of different orders to arrive at reaction kinetics.</p> <p>Estimate quantitatively using conductometric and potentiometric titrations</p> <p>Assess the meaning of values and calculations in experiments and learn the techniques of getting rate constants through graphical methods.</p> <p>Understand laboratory practices and safety/First aid rules.</p> <p>Handle electronic equipment's with technical skills</p>

B.Sc. Chemistry	UCCHM20	Practical IV Gravimetric Estimation	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate a firm foundation in fundamentals and gain an in depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	Quantitatively estimate metal ions using gravimetric analysis. Gain knowledge on the choice of precipitating methods, reagents, crucibles and filtration. Identify common errors in gravimetric analysis. Outline the favorable conditions for precipitation and factors affecting the particle size of the precipitate. Relate particle size of the precipitates with choice of crucibles used in gravimetric estimations.
B.Sc. Chemistry	UCCHN20	Practical V Micro Scale Organic Analysis and Preparation	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry,	Apply the concepts of micro scale analysis in organic qualitative analysis. Develop skill to analyse systematically the given organic mixture and identify the functional group

				problem-solving skills	Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small-Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	and special elements. Prepare simple organic compounds. Discuss the importance of laboratory practices and safety/First aid rules for handling the organic chemicals. Explain the significance of organic reactions to understand the theory concepts of organic chemistry.
B.Sc. Chemistry	USCHD620	SBE – VI Food Chemistry	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small-Scale Chemistry. Apply laboratory skills, carry out experiments, record	Apply simple analytical techniques for detecting food adulterants. Describe the role of food additives, preservatives, flavors, colors and antioxidants. Detect food poisons and apply first aid techniques. Distinguish between alcoholic and nonalcoholic beverages. Describe the importance of

					observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	saturated and unsaturated fats in edible oils and the nutritive value of fruits and vegetables.
B.Sc. Chemistry	UGCHA520/620	Food and Nutrition Chemistry	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	Explain the sources, classification, functions, deficiency diseases and metabolism of carbohydrates. Explain the sources, classification, functions, deficiency diseases and metabolism of proteins and fats. Outline the sources, functions and deficiency diseases of fat soluble and water soluble vitamins. Describe the sources, functions, and deficiency diseases and RDA of essential and trace minerals. Appreciate the nutritive values and evaluate the chemical changes and loss of nutrients during

						cooking and storage of fruits and vegetables.
B.Sc. Chemistry	UGCHB520/620	Cosmetics and Dyes	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate a firm foundation in fundamentals and gain an in depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	Define and classify cosmetics, deodorants, antiperspirants, perfumes, aerosols and identify the pros and cons of synthetic cosmetics. Describe the safety assessment methods used by FDA. Prepare and use fruits and vegetables based herbal cosmetics and evaluate the significance of aromatherapy and apply it to human health and beauty. Explain the properties of natural and synthetic dyes. Understand the impact of dyes used in textile and leather industry to environmental pollution and analyse the importance of dyes in pharmaceutical and food industry.

B.Sc. Chemistry	UACHA20	Allied Chemistry I	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	Understand and apply the concept of aromaticity, mechanism of electrophilic substitution reaction, and chemistry of heterocyclic compounds. Explain the terms involved in kinetics and methods of determination of order of the reaction, and understand the theories of reaction rates. Classify polymers and explain its preparation, properties and uses. Understand the concepts, types of chromatographic techniques, principles of volumetric analysis, and describe the separation and purification techniques. Understand the composition and uses of fuel gases, cement, glass, explosives and dyes.
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B.Sc. Chemistry	UACHB20	Allied Chemistry II	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate a firm foundation in fundamentals and gain an in-depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	Understand the nomenclature and theories of coordination compounds. Understand the concepts of isomerism and tautomerism. Explain the concepts of electrolytes and its types, buffer solutions, separation techniques, and construction of electrochemical cell. Understand the basic principles of photochemistry and kinetics of hydrogen-chlorine reaction. Recall the basic terms in medicinal chemistry, and discuss the causes, symptoms and treatment of cancer, diabetes and AIDS.
B.Sc. Chemistry	UACHC20	Allied Chemistry Practical's II	Our curriculum meets the national standards and enables students to pursue higher studies in higher educational institutions throughout the country.	Attain knowledge and understand the principles and concepts in the respective discipline. Acquire and apply analytical, critical and creative thinking, and	Demonstrate a firm foundation in fundamentals and gain an in depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry,	Acquire skills in acid-base titrations. Acquire skill in Permanganometry Acquire skill in determining hardness of water Analyse the elements presents in organic

				problem-solving skills	Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small Scale Chemistry. Apply laboratory skills, carry out experiments, record observations and inferences and analyze the results and follow the correct procedures and regulations for safe handling and usage of chemicals.	compounds. Analyse the functional groups presents in organic compounds
B.Sc. Computer Science	UCCSD20	Data Structures with C++	To understand how C++ expands C with object-oriented features.	Attain knowledge and understand the principles and concepts in the respective discipline.	Ability to attain knowledge and understand the mathematical and logical concepts, algorithmic principles and computer fundamentals.	Describe the procedural and object-oriented paradigm with concepts of streams, classes, functions, data and objects.
B.Sc. Computer Science	UCCSE20	Practical III Data Structures with C++	To build an understanding of basic concepts of object-oriented programming techniques.	Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Utilize the practical skill to examine, plan and engineer the applications of technology using computing tools and techniques.	Identify the appropriate data structure and algorithm for solving the real-world problems.



B.Sc. Computer Science	UCCSG20	Java Programming	To give the knowledge of the structure and model of the Java programming language	Attain knowledge and understand the principles and concepts in the respective discipline.	Ability to attain knowledge and understand the mathematical and logical concepts, algorithmic principles and computer fundamentals.	Able to understand the use of OOPs concepts.
B.Sc. Computer Science	UCCSH20	Practical-V Java Programming	To introduce the object-oriented programming concepts	Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate the knowledge on appropriate theory, practices and tools for the specification, design and implementation.	Explain about basic Java language syntax and semantics to write Java programs and use concepts such as variables, conditional and iterative execution methods etc.
B.Sc. Computer Science	UCCSO20	Data Communications and Networks	Basics of data communication and networking concepts	Attain knowledge and understand the principles and concepts in the respective discipline.	Understand the basic concepts of system software, hardware and evolution of computer graphics.	To gain expertise in some specific areas of networking such as the design and maintenance of individual networks.
B.Sc. Computer Science	UECSF20	Elective-III B Computer Graphics	Gain knowledge about graphics hardware devices and software used.	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Ability to attain knowledge and understand the mathematical and logical concepts, algorithmic principles and computer fundamentals.	Understand the basics of computer graphics, different graphics systems and applications of computer graphics.
B.Sc. Microbiology	UCMBA20	Fundamentals of Microbiology	The course is designed to provide basic knowledge on the third biotic component in the	Attain knowledge and understand the principles and concepts in the respective discipline.	Acquire an in-depth knowledge on the fundamental concepts and scope of Microbiology and its	Outline the history, recent developments and scope of Microbiology. Discuss important

			ecosystem and the scope of the Microbiology as a field of study		related fields.	aspects of microbial evolution and diversity by employing classical techniques of microbial identification.
B.Sc. Microbiology	UCMBB20	Microbial Physiology and Metabolism	The course is designed to familiarize students with basic concepts of microbial growth and metabolism	Attain knowledge and understand the principles and concepts in the respective discipline.	Develop and execute oral and writing skills necessary for effective communication of discipline specific information and experimental results.	Discuss on various physical and chemical growth requirements of bacteria. Practically apply the knowledge in preparation of culture media for bacterial growth and identification. Equip with various techniques employed to measure microbial growth and evaluate different classes of antibiotics and their mode of actions.
B.Sc. Microbiology	UCMBC20	Basic Techniques in Microbiology	The course is designed to train the learners to identify microorganism through staining techniques, sterilize and prepare culture media, inoculate observe and distinguish the growth patterns of microorganisms in	Attain knowledge and understand the principles and concepts in the respective discipline.	Develop and execute oral and writing skills necessary for effective communication of discipline specific information and experimental results.	Perform cleaning, sterilization of glasswares and prepare culture media. Examine the different morphological forms of microbes. Analyze and employ different staining methods for the identification of bacteria.

			different media.			Competently cultivate bacteria in different types of media and identify their sensitivity and resistance. Use Classical techniques for the identification of bacteria based on their biochemical properties.
B.Sc. Microbiology	UCMBD20	Basic Immunology and Microbial genetics- I	The syllabus is designed to provide knowledge on immunity and organs of immune system, types of antigens and antibody interactions and the role of DNA as a basic unit of gene expression.	Effectively communicate general and discipline-specific information, ideas and opinions.	Acquire an in-depth knowledge on the fundamental concepts and scope of Microbiology and its related fields.	Discuss the overall organization of the immune system and differentiate the humoral and cell mediated immune mechanisms. Explain about types of antigens, antibody and apply the principles and techniques involved in antibody production. Describe the structure of DNA & RNA with their physical & chemical properties. Familiarize with the process involved in the replication of DNA.

B.Sc. Microbiology	UCMBE20	Applied Immunology and Microbial genetics- II	The syllabus is designed to familiarize students on the antigen antibody reactions invivo and exvivo and an in depth understanding on the central dogma of molecular biology.	Attain knowledge and understand the principles and concepts in the respective discipline.	Develop and execute oral and writing skills necessary for effective communication of discipline specific information and experimental results.	Outline and apply the basic principle and mechanism of antigen and antibody reactions. Discuss on the significance of autoimmune diseases, hypersensitivity reactions and interpret on different types of vaccine and vaccination schedule. Explain the gene transfer mechanisms between the prokaryotes and eukaryotes. Identify mutations and DNA repair mechanisms. Comprehend the process of protein synthesis and the methods of gene expression.
B.Sc. Microbiology	UCMBF20	Basic and Applied Immunology	To course is framed to impart hands on training on various agglutination and precipitation reaction and to provide an insight in identifying the cells of immune system.	Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Develop and execute oral and writing skills necessary for effective communication of discipline specific information and experimental results.	Identify the ABO blood groups and its Rh types. Enumerate and observe various granulocytic and agranulocytic cells of immune system. Perform serological diagnosis for the

						<p>detection of typhoid, syphilis, rheumatoid factor and anti-streptolysin 'o'.</p> <p>Demonstrate the direct and indirect pregnancy testing procedure.</p> <p>Quantitate the antigens and antibodies by performing immunodiffusion techniques.</p>
B.Sc. Microbiology	UCMBH20	Food, Dairy and Industrial Microbiology	<p>The course is designed for the learners to provide knowledge on food preservation, causes of spoilage, control and preventive measures from harmful microorganisms; acquire idea about fermentation technology and commercially important microbial products.</p>	<p>Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.</p>	<p>Realize the application-oriented aspects of Microbiology and assimilate the technical skills in basic, medical and applied Microbiology.</p>	<p>Understand the role of microorganisms in food and the factors influencing their growth</p> <p>Apply the principles and procedures involved in preservation of food.</p> <p>Identifying the spoilage causing microorganisms in various foods and analysing the significance of food borne and milk borne diseases in association with public health.</p> <p>Formulate knowledge on the fermentation process with adequate</p>

						information on the fermenters and identifying industrially important microorganisms. Discuss on the industrial production and purification of sauerkraut, cheese, yoghurt, organic solvents, beverages, vitamins and growth factors
B.Sc. Microbiology	UCMBI20	Molecular Biology and rDNA Technology	The course is framed for the learners to understand the concepts of recombinant DNA technology and strategies involved in gene manipulations.	Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Attain higher knowledge by developing competency in the field of Microbiology assuring and enhancing entrepreneurial skills for the betterment of the society.	Compare the use of various cloning vectors in gene cloning techniques and the application of genetic engineering and strain improvement using mutational rDNA technology. Discuss on the methods involved in the Production, of pharmaceutical products and the importance of Gene therapy.
B.Sc. Microbiology	UEMBB20	Entrepreneurial Microbiology	The syllabus is framed to facilitate the students understanding on the concepts of entrepreneurship	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute	Attain higher knowledge by developing competency in the field of Microbiology assuring and	Explain the historical development of industrial Microbiology and outline on the importance of

			such as Planning, decision making, leadership, organizations and authority.	towards the needs of the society	enhancing entrepreneurial skills for the betterment of the society.	entrepreneur development and risk assessment. Analyze the microbial cells as fermented products. Demonstrate the procedures involved in mushroom cultivation and its storage method. Utilize various microorganisms as biofertilizers. Design and use patent in the development of entrepreneurship.
B.Sc. Microbiology	UCMBK20	Microbial Ecology and Soil Microbiology	The course is designed to make the learners understand on the microbial ecology, their interaction, biogeochemical cycling and waste management.	Appreciate biodiversity and enhance eco-consciousness for sustainable development of the society.	Understand and explain the diversity of microorganisms and its interaction with the environment for sustainable development.	Compare the role of microbial communities in the environment and discuss on the significance of Aero and Water Microbiology Assess on the microbiological aspects of management of sewage and design the treatment procedures. Outline on the importance of bioremediation and biodegradation of xenobiotic compounds.

						Familiarize with microorganisms of soil and their role in biogeochemical cycle. Comprehend the importance of plant-microbe interactions.
B.Sc. Microbiology	UEMBC20	Marine Microbiology	To course makes students understand on the ecological role of microorganisms in marine environment.	Appreciate biodiversity and enhance eco-consciousness for sustainable development of the society.	Understand and explain the diversity of microorganisms and its interaction with the environment for sustainable development.	Outline about the different marine environment and compare the microbial communities in the aquatic environment. Discuss adaptations strategies of various extremophilic microorganisms, extremozymes and their importance in biotechnology. Identify the kinetics of aquatic microbial population and microbial interactions – symbiosis and antagonism. Describe about the marine food borne and water borne pathogens. Explain the production and biotechnological applications of novel marine microbial products.



B.Sc. Microbiology	UEMBD20	Microbial Nanotechnology	The course syllabus facilitates students understanding on microbial nanotechnology and its applications.	Attain knowledge and understand the principles and concepts in the respective discipline.	Acquire an in-depth knowledge on the fundamental concepts and scope of Microbiology and its related fields.	Apply nanotechnology for air and water treatment and become familiar with nanoscience education in India and abroad.
B.Sc. Microbiology	UEMBF20	Advanced Microbiology	The course is designed to provide the learners an overview on the advanced aspects of Microbiology	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Attain higher knowledge by developing competency in the field of Microbiology assuring and enhancing entrepreneurial skills for the betterment of the society.	Utilize microorganisms in the preparation of cosmetics. Evaluate the biological potential in samples return from satellites and solar system. Discuss the role of antimicrobial fabrics, carpets, tiles, colorants and produce bacteriostatic sanitary napkins and towels. Comprehend on paper, rubber and plastic Microbiology Analyze the methods for producing its antimicrobial products.
B.Sc. Visual Communication	UCVCA20	Introduction to Visual Communication	To give an overview about the field of Visual communication and Visual language and to enable them to understand the	Attain knowledge and understand the principles and concepts in the respective discipline.	To Acquire Fundamental knowledge of Visual communication and the related study area.	Exploring the insights of Visuals in Media.

			various fields of work in this area			
B.Sc. Visual Communication	UCVCE20	Television Production	To introduce to the students, the field of television media and to train them to produce any type of television programmes	Acquire and apply analytical, critical and creative thinking, and problem-solving skills	To become competent enough to undertake the professional job as per the demands and requirements of the media and Entertainment Industry.	Analyze the lighting techniques and production management.
B.Sc. Visual Communication	UCVCF20	Practical III Computer Graphics	To equip the students to design basic layout designs in print media using Adobe Photoshop software.	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	To get equipped with ICT competencies including Digital literacy.	Creating print advertisements like brochures, pamphlet, banners and magazine with the usage of proper techniques.
B.Sc. Visual Communication	UCVCH20	Practical IV- Post Production Editing	To teach students the art of editing videos through Adobe Premier CC software and to complete basic exercises in editing.	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	To make women professionals in media and attain professional portfolios to become entrepreneurs to increase employability.	Create a short film or documentary using editing techniques.
B.Sc. Visual Communication	UAJLA20	Allied-IV Journalism	To introduce the field of Visual Nature of journalism in various media and to develop journalistic skills in students	Emulate positive social values and exercise leadership qualities and team work.	To become ethically committed media professionals and entrepreneur by adhering to human values, Indian, and the Global culture.	Evaluating the role of journalist in the stream of electronic media.

B.Sc. Visual Communication	USCMB420	Skill-Based Elective Introduction to Art Direction	This course focuses on the introduction to set design and the basics of set construction, and design visualization.	Effectively communicate general and discipline-specific information, ideas and opinions.	To Acquire Fundamental knowledge of Visual communication and the related study area.	Acquiring in-depth knowledge about the creation of set models.
B.Sc. Visual Communication	UCVCI20	Media Research	To orient students on the need for media research and the techniques and process of research studies	Acquire and apply analytical, critical and creative thinking, and problem-solving skills	To become ethically committed media professionals and entrepreneur by adhering to human values, Indian, and the Global culture.	Acquiring Knowledge in Data Analysis and Presentation.
B.Sc. Visual Communication	UCVCJ20	Film Appreciation	To introduce films as a form of visual communication and develop technical knowledge and critical outlook towards film making	Emulate positive social values and exercise leadership qualities and team work.	To become ethically committed media professionals and entrepreneur by adhering to human values, Indian, and the Global culture.	Identifying the concepts of Film as a Mass medium and its Production Stages.
B.Sc. Visual Communication	UCVCK20	Digital Public Relations	To initiate students to the field of Public Relations by giving them a background, trends and techniques in PR	Emulate positive social values and exercise leadership qualities and team work.	To become competent enough to undertake the professional job as per the demands and requirements of the media and Entertainment Industry.	Evaluating the Process of PR and acquiring the profound knowledge in public relation writing.
B.Sc. Visual Communication	UCVCL20	Practical V –2D Animation	To enable students to learn the art of 2-D animation using Adobe Animate CC software	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute	To get equipped with ICT competencies including Digital literacy.	Acquiring the knowledge in basic Animation Techniques.

				towards the needs of the society.		
B.Sc. Visual Communication	UCVCM20	Practical VI Internship	To train students in the field of television production with first-hand experience working in a television news organization for a month as an internee.	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	To become ethically committed media professionals and entrepreneur by adhering to human values, Indian, and the Global culture.	Acquiring an in-depth knowledge in the Respective Media Industry.
B.Sc. Visual Communication	UCVCN20	Project1 Documentary Production	To train students in short-film making or documentary making by putting into practice the techniques learned in television production and script writing through team work.	Emulate positive social values and exercise leadership qualities and team work.	To make women professionals in media and attain professional portfolios to become entrepreneurs to increase employability.	Presenting the Documentation with Master Copy.
B.Sc. Visual Communication	USCMD520	Skill-Based Elective E-Content Production	To enable students, know about the production process and techniques of e-content development, implementing effective e-content material for education field.	Effectively communicate general and discipline-specific information, ideas and opinions.	To get equipped with ICT competencies including Digital literacy.	Executing and publishing the E-contents for formal education.
B.Sc. Visual Communication	UCVCP20	Introduction to ICT and New Media	To give students a brief idea of the evolution of the Communication and Information	Effectively communicate general and discipline-specific information, ideas	To get equipped with ICT competencies including Digital literacy.	Implementing the ICT tools and techniques in New Media.

			Technology, its effects on Economics and working in the New Media	and opinions.		
B.Sc. Visual Communication	UCVCQ20	Practical VII Web Designing	To teach students the art of designing basic websites using Adobe Dreamweaver software	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	. To get equipped with ICT competencies including Digital literacy.	Creating the Webpage and Making Links.
B.Sc. Visual Communication	UEVCA20	Elective II A E-Content Development	To enable students, know about the production process and techniques of e-content development, implementing effective e-content material for education field.	Effectively communicate general and discipline-specific information, ideas and opinions.	. To get equipped with ICT competencies including Digital literacy.	Evaluating the E-learning platforms and technologies
B.Sc. Visual Communication	UCVCR20	Project – 2 Short Film Production	To train students in short-film making or documentary making by putting into practice the techniques learned in television production and script writing	Emulate positive social values and exercise leadership qualities and team work.	To make women professionals in media and attain professional portfolios to become entrepreneurs to increase employability.	Presenting the Documentation with Master Copy.

B.Sc. Visual Communication	USCMD620	Skill-Based Elective Digital Publishing	To learn the basic principles of printing and methodologies used for printing and print finishing.	Attain knowledge and understand the principles and concepts in the respective discipline.	To get equipped with ICT competencies including Digital literacy.	Acquiring the Knowledge in final Printing Process.
B.Sc. Zoology	UCZOI20	Biostatistics	Enable the students to understand the basic concepts and to apply it in various fields.	Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Undertake further studies in Zoology or Multidisciplinary areas.	Identify and collect different types of data and select samples for biological studies Classify and tabulate the data and present them diagrammatically and graphically Discuss theoretical distribution. Compute mean, median and mode. Explain and compute measures of dispersion. Compute t-test; F-test; Chi square test for biological studies.
B.Sc. Zoology	USZOE520	Ornamental Fish Keeping	Start their own business and to conserve biodiversity.	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Utilize the opportunities to conceptualize, nurture and accomplish the dream to be entrepreneur/leaders.	Discuss the importance, design and maintenance of an aquarium. Explain the aquarium plants and usage of various accessories required for an aquarium. Discuss the feed requirement, formulation and

						<p>various live bearing fishes.</p> <p>Differentiate the Egg laying fishes, marine fishes and other organisms in an aquarium.</p> <p>Attain understanding on loan availability and export potential.</p>
B.Sc. Psychology	UCPYA20	General psychology-I	To introduce students to the basic concepts of the field of psychology with an emphasis on application of psychology in everyday life.	Attain knowledge and understand the principles and concepts in the respective discipline	Define major concepts in psychology and explain the theoretical perspectives of the fields in psychology	Define the concepts and explain sensation, perception and attention.
B.Sc. Psychology	UCPYB20	Biological psychology-I	To develop an appreciation of the neuro biological basis of psychological function and dysfunction.	Attain knowledge and understand the principles and concepts in the respective discipline	Capability of demonstrating comprehensive knowledge of psychology and understanding of one or more disciplines which form apart of the undergraduate program of study.	To understand the fundamental processes of memory.
B.Sc. Psychology	UAPMA20	Principles of management	To enables the students to study the evolution of management, to study the functions and principles of a management.	Graduates will be able to understand and fundamental concepts in psychology.	Graduates will be motivated towards ethical and social responsibilities in this complex world,	Demonstrate an understanding of effective motivational strategies utilized by managers and leaders.

B.Sc. Psychology	UCPYC20	General psychology-II	Provide an overview of the basics concepts in psychology to help in better communication and enhance adjustment in life work.	Graduates will be able to acquire basic knowledge and skills in psychology	Capability of demonstrating comprehensive knowledge of Psychology and understanding of one or more disciplines which form a part of the undergraduate programme of study.	Explain the underlying principle of psychological basis of emotion and stress.
B.Sc. Psychology	UCPYD20	Biological psychology-II	To develop an appreciation of the neurobiological basis of psychological function and dysfunction.	Graduates will be able to grow in awareness of self and apply the knowledge acquired to improve self and others.	Ability to work independently and do in-depth study of various concepts of Psychology	Demonstrate the brain development, understand the biological basis of emotions.
B.Sc. Psychology	UCPYE21	Developmental psychology- I	To introduce the concepts and process of human development across the life span	Attain knowledge and understand the principles and concepts in the respective discipline.	Ability to handle various life situation confidently and competently.	Understand the developmental stage of conception through birth, infancy and babyhood, developmental process of early and late childhood.
B.Sc. Psychology	UCPYG21	Developmental psychology-II	To facilitate the process of self-discovery and the development of emotional, cognitive and interpersonal competencies for personal growth and effectiveness using the experiential	Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Ability to work independently and do in-depth study of various concepts of Psychology	Understand the developmental process of puberty and adolescence, young adulthood and middle age till old age.



			learning paradigm			
B.Sc. Psychology	UCPYH21	Introduction to theories of personality	To understand the different theories in personality and to restate in own words the main approaches to personality	Attain knowledge and understand the principles and concepts in the respective discipline.	Define major concepts in psychology and explain the theoretical perspectives of the fields in Psychology.	Understand the concepts, assessments, measurements and research methods pertaining to personality
B.Sc. Psychology	UCPYI22	Social psychology-I	This course helps the students to understand the behaviour of an individual in social situations and helps to gain knowledge about the social forum.	Attain knowledge and understand the principles and concepts in the respective discipline, and apply analytical, critical and creative thinking and problem-solving skills	Define major concepts in psychology and explain the theoretical perspectives of the fields in Psychology.	To state and relate the theories of social psychology.
B.Sc. Psychology	UCPYM22	Social psychology-II	This course gives a deeper understanding about human behaviour and mental process in a social context	Attain knowledge and understand the principles and concepts in the respective discipline.	Ability to work independently and do in-depth study of various concepts of Psychology. Learn independently through self-reflection and evaluation of one's strengths and weaknesses	To demonstrate the consequences of group antagonism and group influence on individuals
B.Sc. Psychology	UAPYA21	Statistics in psychology	To introduce the basic concepts of statistics and to apply statistical methods in psychological research.	Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Ability to handle various life situations confidently and competently, Capability for inquiring about appropriate questions	Understand the concepts related to statistics

					relating to the concepts in various fields of Psychology.	
B.Sc. Psychology	UCPYJ22	Abnormal psychology-I	To introduce the fundamental knowledge in the field of clinical psychology with emphasis on critical understanding of diagnostic criteria and treatment	Attain knowledge and understand the principles and concepts in the respective discipline	Define major concepts in psychology and explain the theoretical perspectives of the fields in Psychology.	Explain the differences between biological and psychosocial model of treatment for abnormal behaviour.
B.Sc. Psychology	UCPYK22	Introduction to Research Methodology	To equip students with the knowledge and ability to produce research papers.	Attain knowledge and understand the principles and concepts in the respective discipline	Ability to handle various life situations confidently and competently, Capability for inquiring about appropriate questions relating to the concepts in various fields of psychology.	Understand the meaning of research and the principles that govern it and acquire knowledge on research process to write the structured report.
B.Sc. Psychology	UCPYL22	Experimental psychology-I	To provide practical exposure to assess, analyse and interpret various psychological concepts.	Attain knowledge and understand the principles and concepts in the respective discipline	Capability of demonstrating comprehensive knowledge of Psychology and understanding of one or more disciplines which form a part of the undergraduate programme of study.	Explain the logic of the psychology experiment and describe the features of experimental methodology intended to satisfy that logic.

B.Sc. Psychology	UCPYN22	Abnormal psychology II	To introduce students to various disorders related to mood, psychotic, personality and substance use disorders	Attain knowledge and understand the principles and concepts in the respective discipline.	Define major concepts in psychology and explain the theoretical perspectives of the fields in Psychology.	Summaries the concepts ,symptoms and treatments of various disorders
B.Sc. Psychology	UCPYO22	Experimental psychology-II	To provide practical exposure to assess, analyse and interpret various psychological concepts and to understand the mental status examination.	Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Capability of demonstrating comprehensive knowledge of Psychology and understanding of one or more disciplines which form a part of the undergraduate programme of study.	Explain the logic of the psychology experiment and describe the features of experimental methodology intended to satisfy that logic.
B.Sc. Psychology	UCPYP22	Project	To equip students with professional competence based on their core subjects learnt.	Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Use effective and fluent written, oral and visual communication to convey ideas and concept	To understand and apply the learnt knowledge through practically derived studies,
B.Com ( B&I)	UCBIB20	Principles of Accounting	Practiced in every organization across the country to know their financial strength	Attain knowledge and understand the principles and concepts in the respective discipline.	To understand and apply the knowledge of accounting & finance in the domain of Commerce, Banking and Insurance.	Acquire conceptual knowledge on basics of accounting
B.Com ( B&I)	UCBIA20	Fundamentals of Banking	Provide a specialized knowledge in Banking Laws and Practice	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills	Identify, analyse and synthesize problems related to the field of Banking and Insurance.	Identifies various types of Banks

				and contribute towards the needs of the society.		
B. Com (B&I)	UCBIC20	Principles of Insurance	Principles of Insurance is focus on life and non-life insurance terms and practices across the nation	Attain knowledge and understand the principles and concepts in the respective discipline.	Identify, analyse and synthesize problems related to the field of Banking and Insurance.	Able to choose various insurance Policies based on their needs
B. Com (B&I)	UCBID20	Financial Accounting	Financial Accounting is an accounting procedure used among the sole trader, partnership firms and companies all over the nation	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	To understand and apply the knowledge of accounting & finance in the domain of Commerce, Banking and Insurance.	To give training about the advanced aspects of Financial Accounting
B. Com (B&I)	UCBIE20	Banking and Legalities and Regulations	Govern the laws, establishment and operations of banking system across nation	Attain knowledge and understand the principles and concepts in the respective discipline.	Acquire competence to efficiently handle technology and communicate in the field of Banking and Insurance Sector through internship and project.	Acquire knowledge about banking laws and their regulations
B. Com (B&I)	UCBIH20	Regulatory Framework of Business and Insurance	Educate about various Rural Insurance Schemes and to understand the provisions of IRDA act	Attain knowledge and understand the principles and concepts in the respective discipline.	Identify, analyse and synthesize problems related to the field of Banking and Insurance.	Understands the provisions of IRDA act.

B. Com (B&I)	UCBII20	Accounting for Management	Practice of identifying, measuring, analyzing, interpreting and communicating financial information	Attain knowledge and understand the principles and concepts in the respective discipline.	To understand and apply the knowledge of Accounting & finance in the domain of Commerce, Banking and Insurance	Analyze various ratios and develops capability to make decision
B. Com (B&I)	UCBIK20	Taxation Law and Practice	In depth analysis of provisions of income tax act 1961 to find out tax liability across nation	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society	Engaging in Lifelong Learning, apply ethical principles and excel as a socially committed individual having empathy for the needs of the society	Compute income from Capital Gain.
B. Com (B&I)	UCBIL20	Accounting for Banking and Insurance	To give knowledge on mobilization of financial resources and preparation of final accounts of banking and insurance companies	Attain knowledge and understand the principles and concepts in the respective discipline.	To understand and apply the knowledge of accounting & finance in the domain of Commerce, Banking and Insurance.	C04To train the students in the preparation of Financial Statements of Banking and Insurance
B. Com (B&I)	UCBIM20	Corporate Laws	The body of law governing the establishment, functioning and winding up procedures of corporate sector	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Engaging in Lifelong Learning, apply ethical principles and excel as a socially committed individual having empathy for the needs of the society.	To give exposure to the students on Capital markets and the laws governing them
B. Com (B&I)	UGBIA20	Non-Major Elective-1 Banking System in India	To Understand the thorough knowledge on banking structure and digital transactions across	Attain knowledge and understand the principles and concepts in the respective discipline	Identify, analyse and synthesize problems related to the field of Banking and Insurance.	C05To make the students of other streams aware of the Banking System in India

			the nation			
B. Com (B&I)	USBIE620	Skill Based Elective V Practical Aspects of Income Tax and E filing	To impart knowledge on submitting tax returns via internet for various assesseees across the nation	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Engaging in Lifelong Learning, apply ethical principles and excel as a socially committed individual having empathy for the needs of the society.	Able to identify E-filing from regular filing returns.
B. Com (B&I)	UCBIQ20	Financial Management	Financial management strategies is about creating profit for the business and ensuring acceptable return on investment in global level	Attain knowledge and understand the principles and concepts in the respective discipline	To understand and apply the knowledge of Accounting & finance in the domain of Commerce, Banking and Insurance.	To make the students conversant with the aspects and importance of Finance and its management
B.B.A (Hospital Administration)	UCHAE20	HealthCare Laws	To understand the structure of judiciary in India and its functions.	Attain knowledge and understand the principles and concepts in the respective discipline.	Attain practical experience through analyzing the past and existing trends.	Recognize the applicability of Laws on Hospital Administration and understand the obligations pertaining to the implementation of Laws applicable to hospitals.
B.B.A (Hospital Administration)	UCHAF20	Hospital Operations Management I	To understand the hospital organization and management model.	Effectively communicate general and discipline-specific information, ideas and opinions.	Attain practical experience through analyzing the past and existing trends.	Understand the classifications of hospitals, roles of hospital administrators, essential hospital operations indicator and current trends in healthcare.

B.B.A (Hospital Administration)	UAHCE20	Allied III Health Care Economics	To analyze how health care outcomes are influenced by changing market forces, social forces, and government forces and its impact on the economy	Attain knowledge and understand the principles and concepts in the respective discipline.	Understand the ethical implications of decision-making and recognize ethical dilemmas in managerial and healthcare domain.	Acquire the ability to evaluate health economics and understand the concept of healthcare market and health insurance.
B.B.A (Hospital Administration)	UEHAA20	Elective I A Business Environment	To understand the nature of business environment and acquire knowledge about strategic decision making in business environment.	Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Understand the ethical implications of decision-making and recognize ethical dilemmas in managerial and healthcare domain.	Understand the concepts in business environment globally and in Indian context.
B.B.A (Hospital Administration)	UCHAH20	Human Resource Management and Development	To integrate the understanding of various HR concepts along with the domain concept to make correct business decisions.	Attain knowledge and understand the principles and concepts in the respective discipline.	Demonstrate managerial knowledge and analytical skills in healthcare sector through reflective learning.	Gain knowledge in basic concepts of Human Resource Management and enable in drafting an HR planning model.
B.B.A (Hospital Administration)	UCHAI20	Hospital Operations Management – II	To understand the roles and functions of materials management, public relations, support services and engineering services in hospital.	Effectively communicate general and discipline-specific information, ideas and opinions.	Attain practical experience through analyzing the past and existing trends.	Understand the factors responsible for good public relations and discuss on common problems of public relations in the hospitals.

B.B.A (Hospital Administration)	UCHAL20	Quality in Health Care	To understand the basic concepts and importance of healthcare quality.	Attain knowledge and understand the principles and concepts in the respective discipline.	Contribute to the sustainable development to the society through professional and entrepreneurial skills.	Analyze the need for healthcare quality management in hospitals and identify the variation in medical practice and implication for quality.
B.B.A (Hospital Administration)	UEHAC20	Elective II A Health Care Insurance	To understand the evolution of Health Insurance in India, the basics of Insurance and its role in economic development.	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Demonstrate managerial knowledge and analytical skills in healthcare sector through reflective learning.	Understand the various types of health insurance policies offered to individuals in India and the rules that govern and protect policy holders.
B.B.A (Hospital Administration)	UEHAD20	Elective II B E Banking	To familiarize the students with the fundamentals of E-banking such as ATM, Internet banking, ECS, EFT Tele banking, Electronic Cheques, Credit cards, Debit cards, MICR, etc.	Attain knowledge and understand the principles and concepts in the respective discipline.	Attain practical experience through analyzing the past and existing trends.	Understand the need for computerization in banks and describe the advantages and disadvantages of online banking
B.B.A (Hospital Administration)	UCHAA20	Fundamentals of Management	To understand the evolution and fundamental concepts related to business.	Attain knowledge and understand the principles and concepts in the respective discipline.	Possess the basic knowledge and skills in managerial domain and healthcare domain.	Understand the management theories, functions and responsibilities of managers.
B.B.A (Hospital Administration)	UCHAB20	Foundation in Hospital Administration	To understand the overall healthcare systems.	Attain knowledge and understand the principles and concepts in the respective discipline.	Possess the basic knowledge and skills in managerial domain and healthcare domain.	Understand the functions of various healthcare systems and learn relevant medical terminology.



B.B.A (Hospital Administration)	UCHAD20	Medical Terminology for Administration	To understand and implement right usage of medical terms.	Attain knowledge and understand the principles and concepts in the respective discipline.	Possess the basic knowledge and skills in managerial domain and healthcare domain.	Recognize and learn the meanings of Standard Medical Abbreviations.
B.B.A (Hospital Administration)	UEHAB20	Elective I B Logistics and Supply Chain Management	To acquire insight in the fundamentals of supply chain management.	Attain knowledge and understand the principles and concepts in the respective discipline.	Possess the basic knowledge and skills in managerial domain and healthcare domain.	Develop the conceptual knowledge about the process of supply chain and its drivers.
B.B.A (Hospital Administration)	UAHSM20	Allied IV Health services Marketing	To identify critical issues in service design including the nature of service products & markets, building the service model and creating customer value.	Effectively communicate general and discipline-specific information, ideas and opinions.	Demonstrate managerial knowledge and analytical skills in healthcare sector through reflective learning.	Understand the similarities and differences in service based and physical product-based marketing activities.
B.B.A (Hospital Administration)	UCHAM20	Organizational Behavior	To analyze individual and group behavior, and understand the implications of organizational behavior on the process of management.	Emulate positive social values and exercise leadership qualities and team work.	Possess the basic knowledge and skills in managerial domain and healthcare domain.	Analyze and compare different theories used to explain individual behavior.
B.B.A (Hospital Administration)	UCHAN20	Global Healthcare System	To understand, recognize and compare the governance, finance and technology aspects of healthcare systems of various countries.	Attain knowledge and understand the principles and concepts in the respective discipline.	Possess the basic knowledge and skills in managerial domain and healthcare domain.	Realize the challenges faced by hospitals which have implemented medical tourism in their system.

B.B.A (Hospital Administration)	UGHAA521	Non-Major Elective I Management Information System	To analyze operational and tactical information systems in functional areas of business.	Attain knowledge and understand the principles and concepts in the respective discipline.	Demonstrate managerial knowledge and analytical skills in healthcare sector through reflective learning.	Evaluate operational and tactical information systems in functional areas of business including marketing, finance and human resource.
B.B.A (Hospital Administration)	UCHAQ20	Materials and Equipment Management	To develop, organize and implement the materials management system in the hospital.	Attain knowledge and understand the principles and concepts in the respective discipline.	Possess the basic knowledge and skills in managerial domain and healthcare domain.	Recognize the importance of value and inventory management in materials management and select the appropriate methods for sustainable economic functioning.
Allied Botany	UBBTA20/U ABTA20	Optional Allied Botany-I/ Allied Botany I	It's a supportive course for the students to excel in life sciences and an allied course for other major students. They are also given the knowledge to become agripreneurs. Students are enabled to apply for applied sciences.	Attain knowledge and understand the principles and concepts in the respective discipline. Appreciate biodiversity and enhance eco-consciousness for sustainable development of the society.		Outline the general characters, life cycle and economic importance of Algae and Fungi. Distinguish the general characters of Bacteria and Virus Understand the general characters and life cycle of Bryophyta, Pteridophytes and Gymnosperms. Upgrade the knowledge in Cell biology and Genetics Identify the pathogens and the applications of Plants in agriculture.

Allied Botany	UBBTB20 /UABTB20	Optional Allied Botany-II/ Allied Botany II	It's a supportive course for the students to excel in life sciences and an allied course for other major students. They are also given knowledge to become agripreneurs. Students are enabled to apply for applied sciences.	Attain knowledge and understand the principles and concepts in the respective discipline. Appreciate biodiversity and enhance eco-consciousness for sustainable development of the society.		Classify Angiosperms and identify the family with the characters. Identify and analyse the histology of Plants. Gain knowledge on Embryology of Plants. Understand the key process of Plant Physiology. Integrate the knowledge of Horticulture in growing Plants.
Allied Botany	UNEVS20	Environmental Studies	Course is designed for students to learn biodiversity and to conserve the environment and for their future. They are also exposed to projects on environmental issues.	Appreciate biodiversity and enhance eco-consciousness for sustainable development of the society.		Gain knowledge on multidisciplinary nature of environmental studies Understand the Ecosystem, its structure and function Understand the conservation of biodiversity Gain knowledge on Environmental pollution, causes and its effects. Apply the laws in prevention of environment.
Foundation Course Tamil	ULTAA20	Tamil Paper I	To improve Students Human Rights values and awareness to Humanity	To develop students as human rights thinkers and humanitarians	Learning to read, Compassionate and observe beyond the classroom	Creating social awareness through literature. Inculcation of life values of witnesses through biography.

Foundation Course Tamil	ULTAB20	Tamil Paper II	To Aware to the students religious Harmony.	The way of literature is to develop a sense of religious harmony among the students	Cultivating the mind of students with religious ethics to love all living beings, do no harm	The way of devotional literature is to promote the spirit of equality and brotherhood.
Foundation Course Tamil	ULTAC20	Tamil Paper III	Individual behaviour to cultivate via of Sangam literature to the students.	Nurturing students through education to overcome the evils found in the society	To develop students as moralists to develop a good society	To lead a moral life through moral literature
Foundation Course Tamil	ULTAD20	Tamil Paper IV	To develop students creative thinking and Job Oriented skills.(LSRW)	Creating basic skills among students and creating employment	Facilitate self-sufficiency in life and lead a self-reliant life	Facilitating personality acquisition in language skills and creative skills
Foundation Course Hindi	ULHNA20	Hindi Paper 1	Hindi as an National language to know the origin and development of different literary forms	Effectively communicate general and discipline-specific information, ideas and opinions.		To appreciate Modern Hindi Poetry
Foundation Course Hindi	ULHNB20	Hindi Paper 2	Hindi as an National language to know the origin and development of different literary forms	Effectively communicate general and discipline-specific information, ideas and opinions.		To enhance critical thinking, imagination, self and social awareness through the study of novels and poetry
Foundation Course Hindi	ULHNC20	Hindi Paper 3	Hindi as an National language to know the origin and development of different literary forms	Effectively communicate general and discipline-specific information, ideas and opinions.		To enhance effective communication skills.

Foundation Course Hindi	ULHND20	Hindi Paper 4	Hindi as an National language to know the origin and development of different literary forms	Effectively communicate general and discipline-specific information, ideas and opinions.		To create an awareness of the distinct features of modern Hindi literature through the writings of great authors
M.A. English	PCENH20	Women's Writing	The course aims at a comprehensive view on the contributions of women in literature across the world including India sensitizing students to national needs regarding women and issues related to women through representations in literature	Attain an in-depth knowledge in the respective domains augmented through self-learning. Apply critical and scientific approaches to address problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives.	Demonstrate wide knowledge of literary periods and movements, intellectual, linguistic, religious, and artistic influences Analyse and interpret Literature using traditional, modern, and contemporary theories and approaches Appreciate and discuss varying opinion of literary works	Explain diversity of women's experiences and their varied cultural moorings
M.A. English	PCEND20	Indian Literature in English	The course focuses on introducing the students to the richness on Indian literature and culture thus fostering in them a nationalistic spirit and sense of appreciation for Indian Literature	Attain an in-depth knowledge in the respective domains augmented through self-learning. Apply critical and scientific approaches to address problems and find solutions. Develop research skills through multi/inter/trans-	Demonstrate wide knowledge of literary periods and movements, intellectual, linguistic, religious, and artistic influences Analyse and interpret Literature using traditional, modern, and contemporary theories and	Recognize the characteristics of major movements and figures of Indian Literature in English through the study of selected literary texts

				disciplinary perspectives.	approaches Appreciate and discuss varying opinion of literary works	
M.A. English	PEENF20	Elective III A Translation studies	The students will be able to exercise on the skills acquired to translate texts making them confident learners who can attempt translation of texts in regional languages	Attain an in-depth knowledge in the respective domains augmented through self-learning. Apply critical and scientific approaches to address problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives.	Demonstrate wide knowledge of literary periods and movements, intellectual, linguistic, religious, and artistic influences Analyse and interpret Literature using traditional, modern, and contemporary theories and approaches Appreciate and discuss varying opinion of literary works	Evaluate the translated and original texts.
M.A. English	PEENH20	Elective IV A History of Ideas	The course contains components highlighting Indian thought as globally significant	Attain an in-depth knowledge in the respective domains augmented through self-learning. Apply critical and scientific approaches to address problems and find solutions. Develop research skills through multi/inter/trans-disciplinary	Demonstrate wide knowledge of literary periods and movements, intellectual, linguistic, religious, and artistic influences Analyse and interpret Literature using traditional, modern, and contemporary theories and approaches	Identify the evolution of human thought and history of ideology Explain the germ and growth of different schools of philosophy, their episteme and ontological development

				perspectives.	Appreciate and discuss varying opinion of literary works	
MSW	PCSWA20	Introduction to social work and sociology	To help students understand the concepts of social stratification, social control and social change.	Persist in life-long learning for personal and societal progress	To utilize the available resources for the empowerment of vulnerable groups and critically analyze the problems, needs to create impact in society	Understand various ideologies of social work
MSW	PCSWB20	Social Case work	To understand and apply the models of case work practice in different settings	Assimilate and apply principles and concept towards skill development and Employability	To enhance the individuals to help themselves with the scientific knowledge about the dynamics of problem and social issues.	Appreciate and practice the basic philosophy, principles and values of social work as a method of social work.
MSW	PCSWC20	Social Group Work	To develop skills to apply group method for development and therapeutic work.	Integrate issues of social relevance in the field of study	To utilize the available resources for the empowerment of vulnerable groups and critically analyze the problems, needs to create impact in society	Examine the role of group worker in different settings.
MSW	PESWA20	Social Problems	Helps to develop an understanding about weaker sections and understanding about various social problems from various communities throughout the	Integrate issues of social relevance in the field of study	To utilize the available resources for the empowerment of vulnerable groups and critically analyze the problems, needs to create impact in society	Analyze social problems and highlight the significance of social work intervention in the Indian Context.

			nation.			
MSW	PISWA20IEC	Disaster Management	To gain preliminary knowledge of disaster risk reduction	Attain an in-depth knowledge in the respective domain augmented through self-learning	It brings a change in attitudes and values of individual irrespective of their class, caste or gender.	Practice the role of the social worker in disaster management and legislation related to it.
MSW	PCSWE20	Human Growth and Personality Development	Helps to equip the students of social work with understanding of human behaviour and personality development models, and to introduce the students to various field of psychology.	Assimilate and apply principles and concept towards skill development and Employability	To prepare the individual in understanding the human behaviour with the relation to society	Explore the concept of social psychology and application of psychological tests.
MSW	PCSWF20	Social Work Research	To develop the capacity independently conceptualize a problem and execute research	Develop research skills through multi/inter/trans-disciplinary perspectives.	To enhance the individuals to help themselves with the scientific knowledge about the dynamics of problem and social issues.	Analyzing the concept of Data Collection and Data Processing.
MSW	PCSWG20	Community Organisation and Social Action	To gain knowledge of various approaches, skills and techniques of working with communities.	Integrate issues of social relevance in the field of study.	To utilize the available resources for the empowerment of vulnerable groups and critically analyze the problems, needs to create impact in society	Able to demonstrate familiarity with Community Organisation and Social Action as method of Social Work Profession.



MSW	PESWC20	Social Policy and Social Legislation	Understanding the knowledge of Social welfare Policy to discrimination and oppression.	Persist in life-long learning for personal and societal progress	To utilize the available resources for the empowerment of vulnerable groups and critically analyze the problems, needs to create impact in society.	Understanding the concepts of Social Policy and Social welfare Policy to emphasize the importance of them
MSW	PISWB20	Women and Development	To develop a capacity to examine the social system that effect women in meeting growth needs and special needs.	Persist in life-long learning for personal and societal progress	To utilize the available resources for the empowerment of vulnerable groups and critically analyze the problems, needs to create impact in society.	Identify and develop the process of protection of women health and environment.
MSW	PNHRA22	Human Rights	Obtain knowledge about Fundamental Human Rights.	Persist in life-long learning for personal and societal progress	It brings a change in attitudes and values of individual irrespective of their class, caste or gender.	To strengthen the promotion and protection of human rights around the globe
MSW	PSCDA20	Rural Community and Development	Able to understand problems invent solutions for better rural development	Assimilate and apply principles and concept towards skill development and Employability	To utilize the available resources for the empowerment of vulnerable groups and critically analyze the problems, needs to create impact in society	To understand rural development and panchayatraj system.
MSW	PSCDB20	Development Planning	To understand the role and contribution of professional social worker in the development process	Assimilate and apply principles and concept towards skill development and Employability	To enhance the individuals to help themselves with the scientific knowledge about the dynamics of problem and social	Assess the elements of participatory technology development and programme development.

					issues.	
MSW	PSHRA20	Labour Legislation	To understand the existing structure and functions of industrial and labour judicial system in India	Integrate issues of social relevance in the field of study	It brings a change in attitudes and values of individual irrespective of their class, caste or gender.	Examine the existing structure of industrial and labour judicial system in India.
MSW	PSMSA20	Medical Social work	Helps to integrate social work with the field of medicine and focus on medical care throughout the nation.	Develop research skills through multi/inter/trans-disciplinary perspectives.	To utilize the available resources for the empowerment of vulnerable groups and critically analyze the problems, needs to create impact in society	Enhance their ability to identify and arrange community supports and resources to facilitate discharge from hospital/transfer to alternative care.
MSW	PSMSB20	Introduction to psychiatry and Mental Health	Focuses on various mental disorders and helps to understand the characteristics of positive mental health and its promotion.	Persist in life-long learning for personal and societal progress	To utilize the available resources for the empowerment of vulnerable groups and critically analyze the problems, needs to create impact in society	Acquire skills to identify, understand and assessment disorder.
MSW	PSHRB20	Human Resource Management	Acquire knowledge on various functions of Human Resource Management	Attain an in-depth knowledge in the respective domain augmented through self-learning	It brings a change in attitudes and values of individual respective of their class, caste or gender	Acquire and build appropriate knowledge based on Human Resource Management
MSW	PESWE20	Project Formulation	Assess and apply the process of project and project cycle	Develop research skills through multi/inter/trans-disciplinary perspectives.	To enhance the individuals to help themselves with the scientific knowledge about the dynamics of problem and social issues.	Understanding the basic concepts of project formulation and planning.

MSW	PSCDC20	Urban Community Development	To provide knowledge of the various methods, programmes, strategies and development efforts towards urban community development.	Persist in life-long learning for personal and societal progress	To utilize the available resources for the empowerment of vulnerable groups and critically analyze the problems, needs to create impact in society	Analyse the role of social justice and diversity in communities, cities and regions.
MSW	PSCDD20	Entrepreneurship Development	Course designed to develop entrepreneurial skills to craft innovative responses to social problems	Assimilate and apply principles and concept towards skill development and Employability	To utilize the opportunity and of professionalism in the development process	Bridge the social, cultural and economic gap by providing opportunities and encourage women to be economically empowered.
MSW	PSHRC20	Labour Welfare and Industrial relations	To sensitize the students to adopt suitable attitude for the practice of industrial relations and labour welfare.	Attain an in-depth knowledge in the respective domain augmented through self-learning	It brings a change in attitudes and values of individual respective of their class, caste or gender	Attain knowledge on various statutory and legal aspects.
MBA	PCBAC20	Economics For Management	To gain knowledge about the basic concepts of economics	Apply critical and scientific approaches to address problems and find solutions.	Students can objectively research on business and management problems by collecting, analysing, and interpreting the data and professionally recommend feasible solution/s.	Understand the concept of Economics

MBA	PCBAF20	Management Information System And Technology	To gain domain knowledge in all aspects of management information system and technology	Apply critical and scientific approaches to address problems and find solutions.	Students develop self-learning skills, and remain updated on contemporary management practices and can leverage their learning to provide solutions to business problems.	Understand about management information system concepts and resources.
MBA	PCBAG20	Supply Chain Management	The course provides an analytical framework for understanding the supply chain techniques of the current business environment.	Attain an in-depth knowledge in the respective domains augmented through self-learning.	At the end of the course the students shall be able to conceptualize, critically analyse, provide solutions to problems challenging real-life situations, gain practical exposure in Business and Management.	Acquire knowledge on Supply Chain activities in the market and implement Supply Chain Management.
MBA	PCBAJ20	Financial Management	To enable the learners, understand the concept of financial management, scope, objectives and time value of money. Also valuation of bonds and shares	Attain an in-depth knowledge in the respective domains augmented through self-learning.	At the end of the course the students shall be able to conceptualize, critically analyse, provide solutions to problems challenging real-life situations, gain practical exposure in Business and Management.	Be well-versed in the financial decision, functions and organization of financial managements. They can also come out with knowledge to value bonds and shares in practice.

MBA	PCBAH20	Marketing Management	To learn the behavior of the consumers and to segment the consumers.	Attain an in-depth knowledge in the respective domains augmented through self-learning.	At the end of the course the students shall be able to conceptualize, critically analyse, provide solutions to problems challenging real-life situations, gain practical exposure in Business and Management.	Be able to segment the customer and identify their behavior.
MBA	PCBAL20	Enterprise Resource Planning	To enable the evolution and role of ERP in business integration.	Attain an in-depth knowledge in the respective domains augmented through self-learning.	At the end of the course the students shall be able to conceptualize, critically analyse, provide solutions to problems challenging real-life situations, gain practical exposure in Business and Management.	Understand how ERP is evolved and analyze various risk in ERP
MBA	PIBAB20	Disaster Management	To acquire the knowledge different National & International Agencies for disaster Management in India	Attain an in-depth knowledge in the respective domains augmented through self-learning.	At the end of the course the students shall be able to conceptualize, critically analyse, provide solutions to problems challenging real-life situations, gain practical exposure in Business and Management.	Acquire the knowledge different National& International Agencies for disaster Management in India

MBA	PIBAH20	Rural Marketing	Insight about the various aspects of rural consumption pattern and challenges.	Attain an in-depth knowledge in the respective domains augmented through self-learning.	At the end of the course the students shall be able to conceptualize, critically analyse, provide solutions to problems challenging real-life situations, gain practical exposure in Business and Management.	Identify the efficient marketing strategies in relation to the channels which influence decision making of the rural customers.
MBA	PIBAI20	Travel And Tourism Management	To develop the ability to understand Travel and Tourism management	Attain an in-depth knowledge in the respective domains augmented through self-learning.	At the end of the course the students shall be able to conceptualize, critically analyse, provide solutions to problems challenging real-life situations, gain practical exposure in Business and Management.	Have basic understanding in Travel and Tourism Management
MBA	PELMB20	Export and Import Management	To educate the students in solving issues related to requirements in export and import management related to water carriers.	Integrate issues of social relevance in the field of study.	Students develop self-learning skills, and remain updated on contemporary management practices and can leverage their learning to provide solutions to business problems.	Understand the payment methods, risks and various financing of water carriers.

MBA	PELMC20	Green Supply Chain and Logistics Management	To describe how the various green supply chain practices can actually save money, increases efficiency and reduce delivery time.	Develop research skills through multi/inter/trans-disciplinary perspectives.	Students gain the ability to synthesize knowledge with skills in the areas of Business and Management and can provide innovative and entrepreneurial solutions to job-related problems.	Understand the concepts in green manufacturing and its challenges.
MBA	PELMA20	Logistics Management	Enhance and develop the skills on international logistics functions.	Integrate issues of social relevance in the field of study.	Students develop self-learning skills, and remain updated on contemporary management practices and can leverage their learning to provide solutions to business problems.	Analyze the strengths and weaknesses of packing and the emerging trends in the same.
M.Com	PCCOA20	Advanced Corporate Accounting	To provide knowledge to the students about a few advanced aspects in company accounts	Attain an in-depth knowledge in the respective domains augmented through self-learning.	To provide a platform to enhance technical, accounting, financial and business skills for developing solutions for business problem	Prepare consolidated final accounts of Holding, Subsidiary, Liquidated Companies, Electricity companies, Insurance companies.
M.Com	PCCOB20	Direct Taxation I	To provide knowledge about calculation of income under different Heads of Income through the application of the provisions of the Income Tax Act,	Assimilate and apply principles and concepts towards skill development and employability	To inculcate the practical knowledge in the field of auditing, tax filing, share market and other finance related services.	Find out the taxable income under different heads

M.Com	PCCOD20	Financial Services & Markets	1961 To enable the students to understand commonly used financial instruments and the services provided by financial institutions and markets	Attain an in-depth knowledge in the respective domains augmented through self-learning	To inculcate the practical knowledge in the field of auditing, tax filing, share market and other finance related services.	Understand the functions of financial markets and services
M.Com	PECOA20	Company Law	The objective of the course is to enable the students to get familiarized with the existing Company Law and Secretarial Procedure	Integrate issues of social relevance in the field of study.	Possess professional skills for employment and lifelong learning in Commerce and Become successful entrepreneurs and professionals in the field of Banking, Auditing and Accounting, Insurance, Manufacturing industries and finance.	Familiarize the meaning of a company, its types and highlights of The Companies Act, 2013
M.Com	PICOA20	Risk Management	To give students the knowledge about risk and managing the risk	Integrate issues of social relevance in the field of study.	To inculcate the practical knowledge in the field of auditing, tax filing, share market and other finance related services.	Gain knowledge of the basics of risks and risk management



M.Com	PCCOE20	Indirect Taxation Law & Practice	To introduce the students to Indirect Taxes, provisions of the Goods and Services Tax Act, 2017 and The Customs Act, 1961	Apply critical and scientific approaches to address problems and find solutions.	To inculcate the practical knowledge in the field of auditing, tax filing, share market and other finance related services.	Understand the concept of indirect taxation
M.Com	PCCOF20	Direct Taxation II	To provide knowledge to the students on calculation of incomes under different Heads of Income, Gross Income Total, Total Income and Tax liability of various assesses through the application of the provisions of Income Tax Act, 1961	Apply critical and scientific approaches to address problems and find solutions.	To inculcate the practical knowledge in the field of auditing, tax filing, share market and other finance related services.	Understand the concept of clubbing of incomes of assesses
M.Com	PCCOG20	Research Methodology	To introduce to the students the concept of research, process of conducting research, methods and techniques of presenting research report	Develop research skills through multi/inter/trans-disciplinary perspectives.	To provide a platform to enhance technical, accounting, financial and business skills for developing solutions for business problem	To understand the concept of research methodology
M.Com	PICOB20	Managerial Economics	To teach the students the basics of Managerial Economics and its application in various fields	Persist in life-long learning for personal and societal progress.	Possess professional skills for employment and lifelong learning in Commerce and Become successful	To analyse the demand situation in the market and the factors affecting demand for a product

					entrepreneurs and professionals in the field of Banking, Auditing and Accounting, Insurance, Manufacturing industries and finance.	
M.Com	PNHRA16	Human Rights	To teach the students the basics of human rights	Integrate issues of social relevance in the field of study.	Integrate cognitive and analytical skills to manage financial aspects of Business and Banks.	To understand the concept of Human rights
M.Com	PCCOI20	Advanced Cost and Management Accounting	To teach the students the advanced techniques in Cost and Management Accounting, enabling corporate reporting and decision making	Attain an in-depth knowledge in the respective domains augmented through self-learning.	To provide a platform to enhance technical, accounting, financial and business skills for developing solutions for business problem	To teach the students the advanced techniques in Cost and Management Accounting, enabling corporate reporting and decision making
M.Com	PCCOK20	Advanced Business Statistics	To teach the students the application of statistical techniques for interpreting and drawing conclusion for business problems.	Apply critical and scientific approaches to address problems and find solutions.	Possess professional skills for employment and lifelong learning in Commerce and Become successful entrepreneurs and professionals in the field of Banking, Auditing and Accounting, Insurance, Manufacturing industries and	Determine and use partial and multiple correlation and regression. Create awareness on non-parametric tests and their application in research real life situation

					finance.	
M.Com	PECOE20	Principles of Insurance	To provide students the basic knowledge of the Principles of Insurance and the methods of risk management	Attain an in-depth knowledge in the respective domains augmented through self-learning.	Integrate cognitive and analytical skills to manage financial aspects of Business and Banks.	To understand the basic principles of insurance
M.Com	PCCON20	Financial Management	To provide knowledge to students about the tools and techniques applicable for efficient management of finance in an organisation	Assimilate and apply principles and concepts towards skill development and employability	Possess professional skills for employment and lifelong learning in Commerce and Become successful entrepreneurs and professionals in the field of Banking, Auditing and Accounting, Insurance, Manufacturing industries and finance.	Comprehend financial management and financial planning
M.Com	PCCOO20	Industrial Relations and Labour Laws	To teach the students the laws prevalent for the protection of the welfare of employees in industries	Integrate issues of social relevance in the field of study.	Integrate cognitive and analytical skills to manage financial aspects of Business and Banks.	Understand the significance of Industrial relations in organizations
M.Com	PECOH20	Legal aspects of Business	To make the students understand the concept of administration in corporate and to create awareness about other laws available for citizens	Attain an in-depth knowledge in the respective domains augmented through self-learning.	Integrate cognitive and analytical skills to manage financial aspects of Business and Banks.	To familiarize with the role of various personnel in governing corporate entities

			of India.			
M.Sc. Biochemistry	PCBCA20	Biomolecules	To understand the salient features of biomolecules in the organization of life.	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	List out the significance of vitamins, its deficiency diseases and about the porphyrin ring containing molecules in living system
M.Sc. Biochemistry	PCBCB20	Human Physiology and Nutrition	To study about the Physiological system of human body and Nutrients with their deficiencies.	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Describe the general function of each organ system
M.Sc. Biochemistry	PCBCC20	Cell Biology	To understand the Cell, Cell organelle's structure, function and metabolism	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Discuss about the various sub-cellular components of cells and its functions in the biological system
M.Sc. Biochemistry	PCBCG20	Practical I Main Practical-I	To help students to expertise in the Biomolecules, Cell Dynamics and biochemical techniques.	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Discuss qualitative and quantitative analysis of various biomolecules

M.Sc. Biochemistry	PCBCH20	Practical II Main Practical-II	To learn about the analytical techniques and enzymology experiments.	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Explain the basic principle involved in intermediary metabolism
M.Sc. Biochemistry	PEBCA20	Elective IA Biophysical Chemistry	To make the students to understand the concepts of bioenergetics and techniques.	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Describe the spectroscopic techniques – NMR, UV and MS
M.Sc. Biochemistry	PEBCB20	Elective IB Pharmaceutical Biochemistry	To make the students aware of uses and abuse of drugs.	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Assess the drug tolerance and the factors that modify the effect of drugs
M.Sc. Biochemistry	PCBCD20	Analytical Biochemistry	To understand the principles and applications of analytical techniques.	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Apply the electrophoretic techniques for the separation of proteins and nucleic acids
M.Sc. Biochemistry	PCBCE20	Enzymology	To learn the methodology involved in assessing the enzyme activity and mechanism of enzyme action.	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Apply the biochemical calculation for enzyme kinetics

M.Sc. Biochemistry	PCBCF20	Intermediary Metabolism	To make the students to understand the reactions catalyzed by different enzymes and their metabolic pathways.	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Translate the reactions catalyzed by different Enzymes in metabolic pathway
M.Sc. Biochemistry	PEBCC20	Elective IIA Ecology, Evolution and Developmental Biology	The course enables the students to understand and analyze the role of ecological and evolutionary modifications in the development of organisms and their survival.	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Explain the insight on morphogenesis and organogenesis in plants
M.Sc. Biochemistry	PEBCD20	Elective II B Toxicology	The course gives a detailed understanding and identification of toxic substances, dose-response, tests conducted and its impact on cellular activities.	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Use the knowledge of air pollutants in the assessment of occupational hazards
M.Sc. Biochemistry	PCBCI20	Advanced Endocrinology	The course describes in detail about the role of endocrine glands, their secretion, its metabolic effect on target cells involving various signaling pathways and signal	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Identify the structure and functions of endocrine glands and hormones

			chain proteins.			
M.Sc. Biochemistry	PCBCJ20	Advanced Immunology	To help the students to understand the components of immune system and it's functioning.	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Discuss the reason for different vaccination
M.Sc. Biochemistry	PCBCK20	Advanced Biotechnology	To learn how to apply the knowledge of genetic engineering in problem solving and in practice.	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Apply the knowledge of genetic engineering in problem solving and in practice
M.Sc. Biochemistry	PCBCN20	Practical II Main Practical III	The course is aimed to enable the student interpret hormonal imbalance and clinical conditions and also to provide in-depth practical knowledge and skill in performing immune-techniques and cell culture techniques.	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Analyse the prevalence and impact of endocrine hormone in regulating health
M.Sc. Biochemistry	PCB0	Practical II Main Practical IV	To help students to expertise in the molecular biology and clinical Biochemistry techniques.	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Utilize practical knowledge and skill for diagnosing various diseases using biochemical analysis in blood specimen

M.Sc. Biochemistry	PEBCE20	Elective III A Microbiology	To understand the importance of applications of microorganisms.	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Identify the various infectious diseases, its causative agents and antimicrobial drugs
M.Sc. Biochemistry	PEBCF20	Elective III B Research Methodology	To addresses the issues inherent in selecting a research problem and discuss the techniques and tools to be employed in completing a research project	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Understand the significance of internet in research
M.Sc. Biochemistry	PCBCL20	Molecular Biology	The course will enable the student to learn the molecular events occurring in gene and its application in field of biomedical and genetic research.	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Describe the blueprint of life and its functions
M.Sc. Biochemistry	PCBCM20	Advanced Clinical Biochemistry	To gain concepts of assessing the human physiology using biological fluid.	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Compare the liver and renal disorders
M.Sc. Biochemistry	PEBCG20	Elective IVA Plant Biochemistry	To help the students to understand the plant metabolites and their application in the field of	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and	Explain the role of plant growth regulators and plant tissue culture



			medicine.		consequent responsibilities	
M.Sc. Biochemistry	PEBCH20	Elective IV B Herbal Therapy	To help students to understand the concepts in pharmacognosy and the role of medicinal plants.	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Describe the concepts of Pharmacognosy
M.Sc. Biochemistry	PIBCA20	IEC Organic Farming	To help students to understand the concepts and importance of organic farming and use it as a source of income generation	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Apply the concept of organic farming
M.Sc. Biochemistry	PIBCB20	IEC Food Preservation	To enable students to understand the concepts of food preservation and methods involved	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Find the methods of food preservation
M.Sc. Biochemistry	PIBCC20	IEC Horticulture	To emphasis on the significance and concepts of horticulture and the techniques involved.	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Gain knowledge on cropping techniques and harvesting methods
M.Sc. Biochemistry	PIBCD20	IEC Cancer Biology	To help students to understand the biology, diagnosis and treatment involved in cancer.	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and	Examine the basic concepts of clinical research in oncology

					consequent responsibilities	
M.Sc. Biochemistry	PIBCE20	IEC Nanobiotechnology	The course aims to provide an interdisciplinary knowledge on Nano materials and their applications in biosciences.	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Create knowledge to develop Nanomaterials
M.Sc. Biochemistry	PIBCF20	IEC Stem cell Technology	The course gives in depth knowledge on stem cell biology, regulation of stem cell differentiation, tools to study and its utilization in treating various disorders	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Use hematopoietic stem cells in treating blood related disorders and diseases
M.Sc. Biochemistry	PIBCG20	IEC Psychology	The course is aimed to enhance the psychological skills for the students to acquire factual knowledge and ability to conceptualize and apply in their life.	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Critically evaluate the fundamental processes underlying human behavior.
M.Sc. Biochemistry	PIBCH20	IEC Entrepreneurial Biochemistry	The course provides detailed knowledge on ideas, opportunities and components necessary for bio-entrepreneurship.	Persist in life-long learning for personal and societal progress.	Demonstrate understanding of the societal, health, safety, legal and cultural issues and consequent responsibilities	Identify and implement the role of entrepreneur towards society.

M.Sc. Chemistry	PCCHA20	Stereo Chemistry and Conformational Analysis	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	Attain an in-depth knowledge in the respective domains augmented through self- learning. Assimilate and apply principles and concepts towards skill development and employability. Develop research skills through multi/inter/trans-disciplinary perspectives.	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.	Assign the configuration of stereoisomers including those with no stereo genic carbon center and classify the stereospecific and stereoselective reactions. Compare the relative stability and reactivity of conformational isomers of cyclohexane and related compounds. Ascertain the knowledge on the mechanism and stereo chemical outcome of aliphatic nucleophilic substitution reactions. Compare the mechanistic spectra of elimination reactions. Employ the principles of Optical Rotatory Dispersion and Circular Dichroism for various applications.
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M.Sc. Chemistry	PCCHB20	Structural Inorganic Chemistry	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	Attain an in-depth knowledge in the respective domains augmented through self- learning. Assimilate and apply principles and concepts towards skill development and employability. Develop research skills through multi/inter/trans-disciplinary perspectives.	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.	Summarize the theories of acids and bases. Discuss conductors, semiconductors and insulators based on band theory. Assess the structure and bonding in different types of ionic solids, metals and alloys. Discuss the structure and bonding in polyacids, silicates and inorganic polymers. Distinguish the structure and bonding in boranes, carboranes, metallo carboranes, boron nitrides and metal clusters.
M.Sc. Chemistry	PCCHC20	Kinetics and Photo Chemistry	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	Attain an in-depth knowledge in the respective domains augmented through self- learning. Assimilate and apply principles and concepts towards skill development	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress.	Describe Activated Complex Theory in terms of translational and vibrational partition functions and apply it to derive the kinetics of reactions in solutions, Hammett and Taft equations and

				and employability. Develop research skills through multi/inter/trans-disciplinary perspectives.	Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.	kinetic isotope effects in studying the mechanism of chemical reactions. Discuss the concepts and kinetics of homogeneous and heterogeneous catalysis and explain adsorption isotherms of Langmuir and BET. Derive the kinetics of complex reactions and apply the techniques of fast reactions. Analyze the principals involved in photo excitation of molecules. Derive the kinetics of photochemical reactions, and explain the applications of radiation chemistry, kinetics of photochemical reactions, solar energy conversion and radiolysis of water.
M.Sc. Chemistry	PECHA20	Elective I A Polymer Chemistry	Our curriculum meets the national standards and enables students to clear national level examinations to	Attain an in-depth knowledge in the respective domains augmented through self- learning. Assimilate and apply	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning,	Classify polymers and illustrate the types of polymerization techniques. Illustrate the characterization

			pursue higher education as well as employment.	principles and concepts towards skill development and employability. Develop research skills through multi/inter/trans-disciplinary perspectives.	persist in life-long learning for personal and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.	techniques such as XRD, TGA, DSC, SEM and TEM. Discuss the polymer reactions and degradation. Evaluate polymer processing techniques in industries, determine molecular weight of polymers by selected methods such as GPC, osmometry, viscometry, ultracentrifugation and MALDI methods. Compile the synthesis, properties and applications of polymers and biopolymers.
M.Sc. Chemistry	PECHB20	Elective I B Nano chemistry	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Develop research skills through multi/inter/trans-disciplinary	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical	Discuss the basic concepts of nano chemistry including theories of nano chemistry, and to classify the various types of nano systems. Explain the different methods and techniques of synthesizing nanoparticles. Discuss the characterization of the

				perspectives.	and scientific approaches to address the problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.	nanomaterials. Explain the applications of nano chemistry in optics, electronics, and sensors. Outline the biomedical application of nanoparticles.
M.Sc. Chemistry	PCCHD20	Organic Reactions and Mechanisms	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Develop research skills through multi/inter/trans-disciplinary perspectives.	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives and to	Discuss the oxidation of organic compounds using selected oxidizing reagents. Discuss the reduction of organic compounds using selected reducing reagents. Describe the mechanisms of various rearrangement reactions and their applications. Explain the reaction mechanisms and applications of selected named reactions. Illustrate the types of photo chemical reactions, classify pericyclic reactions, and examine the

					qualify CSIR-NET and other competitive examinations.	correlation diagram for butadiene-cyclobutene system.
M.Sc. Chemistry	PCCHE20	Advanced Coordination Chemistry	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Develop research skills through multi/inter/trans-disciplinary perspectives.	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.	Interpret the stability of complexes and explain the applications of various macrocyclic ligands. Explain and analyse the concepts of CFT, MOT and Jahn Teller distortion. Analyse the absorption spectra and determine magnetic susceptibility of metal complexes by different methods. Discuss the electron transfer reaction mechanisms and their importance in biological systems. Explain the reactivity and mechanisms of square planar and octahedral complexes and appraise the applications of complexes in various fields.



M.Sc. Chemistry	PCCHF20	Group Theory and Quantum Chemistry	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Develop research skills through multi/inter/trans-disciplinary perspectives.	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.	Identify symmetry operations and assign point groups of molecules. Construct the character tables for $C_{2v}$ and $C_{3v}$ point groups, apply the concepts of symmetry in molecular vibrations, chemical bonding, and electronic transitions. Identify the limitations of classical mechanics, apply quantum chemistry to solve Schrödinger wave equation for one, two- and three-dimensional boxes and for hydrogen atom and helium ion. Discuss classical and quantum mechanical treatments of one-dimensional harmonic oscillator, calculate the rotational constant and bond length of diatomic molecules. Discuss and apply the approximation methods to single and multi-electron systems, apply the MO
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						theory to di and polyatomic molecules, explain the application of HMO theory to ethylene, butadiene, and benzene.
M.Sc. Chemistry	PECHC20	Elective IIA Pharmaceutical Chemistry	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	Attain an in-depth knowledge in the respective domains augmented through self- learning. Assimilate and apply principles and concepts towards skill development and employability. Develop research skills through multi/inter/trans-disciplinary perspectives.	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.	Classify the pharmaceutical drugs and explain the mechanism of drug action and absorption of drugs. Elaborate the biological role of important inorganic compounds and the drugs used in the treatment of mental disorders. Summarize the methods of drug design and development. Review the causes of cancer and its treatment, and to assess the mechanism and the mode of action of anticancer drugs. Formulate the different types of Nutraceuticals and their applications, and to justify the role of anticoagulants in the treatment of blood

M.Sc. Chemistry	PECHD20	Elective IIB Medicinal Chemistry	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	Attain an in-depth knowledge in the respective domains augmented through self- learning. Assimilate and apply principles and concepts towards skill development and employability. Develop research skills through multi/inter/trans-disciplinary perspectives.	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.	disorder. Explain the designing of drugs by different approaches. Define the physiochemical properties of drug molecules, and illustrate pharmacophore, toxicophore, melanophore and interchangeable bio isosteres. Describe the nature of drug receptors and their binding interactions. Explain the stereochemical properties and biological activity of drug molecules, and to identify the properties of drug molecules by quantum mechanics and molecular mechanics. Describe the physiological and pathological approaches while designing newer drugs for newer diseases, and to Discuss the
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						biological activity of steroids and radioisotopes.
M.Sc. Chemistry	PCCHG20	Practical I Organic Chemistry I	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	<p>Attain an in-depth knowledge in the respective domains augmented through self-learning.</p> <p>Apply critical and scientific approaches to address problems and find solutions.</p> <p>Develop research skills through multi/inter/trans-disciplinary perspectives.</p>	<p>Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress.</p> <p>Demonstrate an ability to conduct experiments and perform accurate quantitative measurements with an understanding of the theory and develop practical skills in handling analytical instruments.</p> <p>Interpret experimental results, perform calculations on these results and draw reasonable, accurate conclusions.</p> <p>Assimilate and apply principles and concepts towards skill development, employability, critical and scientific</p>	<p>Identify the components in two component mixture and detect the functional groups.</p> <p>Prepare the organic compounds and purify them.</p> <p>Perform common laboratory techniques like separation, refluxing, recrystallization, vacuum filtration, and sublimation.</p>

					<p>approaches to address the problems and find solutions.</p> <p>Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.</p>	
M.Sc. Chemistry	PCCHH20	Practical II Inorganic Chemistry I	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	<p>Attain an in-depth knowledge in the respective domains augmented through self-learning.</p> <p>Apply critical and scientific approaches to address problems and find solutions.</p> <p>Develop research skills through multi/inter/trans-disciplinary perspectives.</p>	<p>Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress.</p> <p>Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions.</p> <p>Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET</p>	<p>Demonstrate group separation and analysis of inorganic mixtures.</p> <p>Identify rare and common ions present in the inorganic mixtures.</p> <p>Prepare selected inorganic complexes.</p> <p>Estimate the metal ions present in the sample by colorimetric method.</p>

					and other competitive examinations.	
M.Sc. Chemistry	PCCHI20	Practical III Physical Chemistry I	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Apply critical and scientific approaches to address problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives.	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.	Prepare the solutions of different concentrations. Experiment and calculate the rate constant of ester hydrolysis and primary salt effect. Determine the order and energy of activation using kinetics. Construct and analyze phase diagrams, and examine the validity of Freundlich and Langmuir adsorption isotherms. Determine the rate constant using polarimeter and stability constant using photo colorimeter, and develop skills in handling colorimeter and polarimeter.
M.Sc. Chemistry	PNHRA20	Human Rights	This course educates the students about their fundamental rights and duties in the country.	Integrate issues of social relevance in the field of study. Persist in life-long learning for personal and societal progress.	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long	Obtain knowledge and understand about fundamental Human Rights Understanding of the concepts of Indian constitution and to

					<p>learning for personal and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions.</p> <p>Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.</p>	<p>emphasize its importance</p> <p>Promote knowledge in understanding the concept of Universal Declaration and International Covenants on Human Rights.</p> <p>To strengthen the promotion and protection of human rights around the globe.</p> <p>Promote awareness on the Indian legal system, rule of law, human rights related policies, Acts and movements</p>
M.Sc. Chemistry	PICH20	CSIR-NET Preparatory Course in Inorganic Chemistry	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical and scientific	Apply and analyze the periodicity of properties of elements, MOT, VSEPR theory, concepts of acids and bases, and the basic aspects of solid-state chemistry.
						<p>Apply and analyze the properties of main group elements and their compounds.</p> <p>Apply VB, CF and MO theories, and analyze the reactions</p>

					<p>approaches to address the problems and find solutions.</p> <p>Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.</p>	<p>and properties of complexes.</p> <p>Apply and analyze the chemistry of organometallic and bioinorganic compounds.</p> <p>Apply and analyze the various techniques involved in the characterization of inorganic compounds.</p>
M.Sc. Chemistry	PCCHJ20	Synthetic Organic Chemistry	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	<p>Attain an in-depth knowledge in the respective domains augmented through self-learning.</p> <p>Assimilate and apply principles and concepts towards skill development and employability.</p> <p>Develop research skills through multi/inter/trans-disciplinary perspectives.</p>	<p>Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress.</p> <p>Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions.</p> <p>Develop research skills through multi/inter/trans-disciplinary perspectives and to</p>	<p>Analyze and evaluate the concepts of retrosynthesis, disconnection approach and protection of common functional groups and apply them in synthesizing target molecules.</p> <p>Evaluate the methods of asymmetric synthesis and resolution.</p> <p>Analyze the preparation and uses of selected organic reagents.</p> <p>Evaluate the role of PTC in organic synthesis.</p> <p>Appraise the role of transition metals in</p>



					qualify CSIR-NET and other competitive examinations.	selected named reactions and plan chemo selective, regioselective and stereoselective named reactions.
M.Sc. Chemistry	PCCHK20	Molecular Spectroscopy	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	Attain an in-depth knowledge in the respective domains augmented through self- learning. Assimilate and apply principles and concepts towards skill development and employability. Develop research skills through multi/inter/trans-disciplinary perspectives.	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.	Apply Ultraviolet spectroscopy for the identification of organic compounds and inorganic complexes, and to interpret the IR spectra of organic compounds and inorganic complexes. Discuss the different ionization techniques involved in Mass spectroscopy, principle of GC-MS and its advantages over MS, and to elucidate the molecular formulae and structures of unknown compounds using Mass spectroscopy. Analyze the splitting pattern in the $^1\text{H}$ , $^{13}\text{C}$ , $^{19}\text{F}$ and $^{31}\text{P}$ NMR spectra for structural determination. Discuss the principle, instrumentation and

						<p>applications of Mossbauer spectroscopy and analyze the Mossbauer spectra of iron and tin compounds.</p> <p>Explain hyper fine splitting in EPR and interpret EPR spectra of simple radicals and complexes, and to explain the electronic spectra for chemical analysis.</p> <p>Elaborate on the concepts and theories of microwave, IR, rotational and vibrational Raman, and electronic spectroscopy.</p>
M.Sc. Chemistry	PCCHL20	Electro Chemistry	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	Attain an in-depth knowledge in the respective domains augmented through self- learning. Assimilate and apply principles and concepts towards skill development and employability. Develop research skills through multi/inter/trans-disciplinary	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical	<p>Examine the concepts and theories of strong electrolytes and verify the Debye Huckle Onsager equation.</p> <p>Explain the principle and application of various analytical techniques.</p> <p>Compare the structure of double layers.</p> <p>Examine and predict the kinetics of electrode reaction of</p>

				perspectives.	and scientific approaches to address the problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.	single step and multistep and discuss the theories and mechanism of corrosion and passivation. Classify the types of fuel cells and ion selective electrodes.
M.Sc. Chemistry	PECHE20	Elective III A Analytical Chemistry	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Develop research skills through multi/inter/trans-disciplinary perspectives.	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives and to	Compare different thermal methods of analysis and explain their applications in material science. Elaborate the principle, instrumentations of the Gas, HPLC and SCF chromatographic techniques and their applications. Examine the identification of metal ions using AAS and photo acoustic spectroscopy. Solve simple problems in chemistry using 'C' program. Analyze the importance of Green Chemistry and its

					qualify CSIR-NET and other competitive examinations.	impact on the sustainable environment and the quality of water.
M.Sc. Chemistry	PECHF20	Elective III B Green Chemistry	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Develop research skills through multi/inter/trans-disciplinary perspectives.	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.	Explain the goals and progress of green chemistry. Summarize the principle of green chemistry and green reactions. Discuss the good laboratory practices and designing of green synthesis, and to explain the mechanism and applications of certain named reactions and rearrangements. Explain selected green preparations. Analyze the future trends in green chemistry.

M.Sc. Chemistry	PICHE20	CSIR-NET Preparatory Course in Organic Chemistry	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	Attain an in-depth knowledge in the respective domains augmented through self- learning. Assimilate and apply principles and concepts towards skill development and employability	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.	Evaluate and apply the theories, concepts, processes, and principles of stereochemistry to qualify UGC-CSIR and other competitive examinations. Appraise the reaction intermediates and named reactions in organic chemistry to qualify UGC-CSIR and other competitive examinations. Examine the organic transformations and asymmetric synthesis to qualify UGC-CSIR and other competitive examinations. Evaluate the pericyclic reactions and applications of heterocyclic compounds to qualify UGC-CSIR and other competitive examinations. Examine the natural product chemistry to qualify UGC-CSIR and other competitive examinations.
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M.Sc. Chemistry	PICHG20	Research Methodology	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	Attain an in-depth knowledge in the respective domains augmented through self- learning. Apply critical and scientific approaches to address problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives.	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.	Define research and its objectives, illustrate hypothesis testing, and draw the research plan. Carry out literature search offline and online to fix the research problem and illustrate the importance of IF, SCI, h index and i-index. Apply statistical analysis in research methodology. Describe the general format of thesis writing and the research ethics to be followed. Illustrate the safety measures to be taken in handling toxic, inflammable and explosive chemicals.
M.Sc. Chemistry	PCCHM20	Natural Products and Bioorganic Chemistry	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	Attain an in-depth knowledge in the respective domains augmented through self- learning. Assimilate and apply principles and concepts towards skill development	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress.	Examine the synthesis and reactions of selected heterocyclic pigments, nucleic acids, vitamins and alkaloids. Evaluate the biosynthesis and metabolism of lipids,

				and employability. Develop research skills through multi/inter/trans-disciplinary perspectives.	Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.	cholesterol and hormones. Explain the metabolic pathway of amino acids and proteins and to analyze the structural aspects of proteins. Elaborate the role and metabolism of nucleic acids, genetic code, transcription and translation. Describe the structure and biological role of enzymes ( $\alpha$ -chymotrypsin) and cofactors.
M.Sc. Chemistry	PCCHN20	Solid State Chemistry and Nuclear Chemistry	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Develop research skills through multi/inter/trans-disciplinary perspectives.	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find	Sketch the structures of perovskite, CdI, NiAs, spinels, explain electrical, magnetic and optical properties of solids, compare different methods of solid-state reactions and demonstrate selected single crystal growth techniques. Discuss the magnetic properties of nuclides. Describe quark theory and salient features of nuclear models. Illustrate the types of

					<p>solutions. Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.</p>	<p>nuclear reactions, explain the applications of radioisotopes in neutron activation analysis, isotope dilution analysis and age determination. Compare the different types of particle detectors, accelerators and explain the knowledge on Nuclear Waste Management.</p>
M.Sc. Chemistry	PCCHO20	Thermodynamics	<p>Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.</p>	<p>Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Develop research skills through multi/inter/trans-disciplinary perspectives.</p>	<p>Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions. Develop research skills through multi/inter/trans-</p>	<p>Determine the partial molar properties, activity and activity coefficient of non-electrolytes, and standard free energies. Illustrate the relationship between microscopic properties of individual atoms and molecules with macroscopic thermodynamic observables and derive the different types of distribution laws. Derive different forms of molecular partition function, heat capacity of solids and explain law of equipartition of</p>



					disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.	energy. Distinguish the nuclear spin states of hydrogen and deuterium, explain electron gas in metals and blackbody radiation, and apply spectroscopic data for statistical thermodynamics. Explain the concept of non-equilibrium thermodynamics, and derive entropy production in chemical reactions and open systems.
M.Sc. Chemistry	PECHG20	Elective IV A Organometallic and Bioinorganic Chemistry	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Develop research skills through multi/inter/trans-disciplinary perspectives.	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions.	Explain the preparation, properties, structure and bonding of organometallic complexes and appraise 18 electron rule and EAN rule for metal carbonyls. Explain the mechanism of organometallic reactions, rearrangement reactions of aluminum and tin compounds. Appraise the role of transition metal catalysts in industrial

					Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.	processes. Evaluate the role of oxygen transport, ion transport and electrolytic balance in organisms, and review nitrogen fixation. Elaborate on the biological role of metalloenzymes, and the importance of metals used for diagnosis and treatment of cancer.
M.Sc. Chemistry	PECHH20	Elective IV B Organic Farming and Solid Waste Management	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	Attain an in-depth knowledge in the respective domains augmented through self- learning. Assimilate and apply principles and concepts towards skill development and employability. Develop research skills through multi/inter/trans-disciplinary perspectives.	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions. Develop research skills through multi/inter/trans-	Elaborate the concept of organic farming. Explain the vision and importance of organic farming movements, apply vermicomposting process and prepare bio-fertilizers. Evaluate the technology to approach the benefits of organic farming. Explain the various aspects of solid waste management. Demonstrate the methods to reduce hazards.

					disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.	
M.Sc. Chemistry	PCCHP20	Practical IV Organic Chemistry II	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	Attain an in-depth knowledge in the respective domains augmented through self- learning. Apply critical and scientific approaches to address problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives.	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.	Develop skills to perform two stage preparations of organic compounds and crystallize them. Calculate the saponification value of oil. Estimate the amount of the given organic compound. Demonstrate simple chromatographic techniques. Interpret the structure of organic compounds by analyzing spectral data.

M.Sc. Chemistry	PCCHQ20	Practical V Inorganic Chemistry II	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	Attain an in-depth knowledge in the respective domains augmented through self- learning. Apply critical and scientific approaches to address problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives.	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.	Estimate the amount of metal ions in inorganic mixtures by volumetric and gravimetric methods. Estimate the percentage of metals in ores and alloys by volumetric and gravimetric methods. Prepare selected inorganic complexes. Interpret the spectra of selected inorganic compounds.
M.Sc. Chemistry	PCCHR20	Practical VI Physical Chemistry II	Our curriculum meets the national standards and enables students to clear national level examinations to pursue higher education as well as employment.	Attain an in-depth knowledge in the respective domains augmented through self- learning. Apply critical and scientific approaches to address problems and find solutions.	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress.	Apply laboratory skills to perform physio-chemical experiments. Demonstrate acid-base, redox and precipitation titrations using conductometry and potentiometry. Determine the pH of

				Develop research skills through multi/inter/trans-disciplinary perspectives.	Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.	buffer solution potentiometrically and verify Ostwald dilution law and Onsager's equation. Interpret the experimental results obtained by conductometric and potentiometric titrations. Describe spectral methods to calculate force constant and interpret UV, IR and NMR spectra.
M.Sc. Chemistry	PICHH20	CSIR-NET Preparatory Course in Physical Chemistry	These courses are designed to meet the national standards and enable students to clear national level examinations to pursue higher education as well as employment.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability	Attain an in-depth knowledge on advanced concepts in various branches of chemistry augmented through self-learning, persist in life-long learning for personal and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions.	Apply quantum chemistry to solve Schrödinger wave equation for one, two- and three-dimensional boxes and for hydrogen and helium atoms, apply the approximation methods to single and multi-electron systems, and discuss the concepts of atomic structure, spectroscopy and apply term symbols to many electron systems. Elaborate Huckel

					<p>Develop research skills through multi/inter/trans-disciplinary perspectives and to qualify CSIR-NET and other competitive examinations.</p>	<p>theory to conjugated systems, concepts of symmetry in molecular vibrations, chemical bonding and electronic transitions. Compile the concepts of chemical kinetics and enzyme kinetics, describe the concepts of statistical thermodynamics and apply the partition function to model systems. Relate the concepts of electrochemistry, explain the kinetics of reactions in solutions, acid-base catalysis and surface reactions. Illustrate the theory and properties of colloids, mechanism of heterogeneous catalysis and structure of solids, discuss the kinetics of polymerization, and data analysis.</p>
M.Sc. Computer Science	PCCSB20	.Net Framework	To update and enhance skills in writing Windows applications, ADO.NET and	Assimilate and apply principles and concepts towards skill development & employability.	To Formulate models, design and conduct experiments for interpreting data and critical thinking	Understand code solutions and compile C# projects within the .NET Framework.

			ASP.NET.			
M.Sc. Computer Science	PECSA20	Elective I A Design and Analysis of Algorithm	To develop skills in design and implementation of data structures and their applications.	Assimilate and apply principles and concepts towards skill development & employability.	To design, implement, and evaluate a computer-based system, process, component, or program for various applications.	Analyze the computational complexity of various algorithms
M.Sc. Computer Science	PCCSI20	Theory of Computation	To develop skills in design and implementation of data structures and their applications	Apply critical and scientific approaches to address problems and find solutions.	To apply fundamental knowledge of computing and science relevant to the discipline.	Apply critical and scientific approaches to address problems and find solutions.
M.Sc. Computer Science	PECS20	Elective II B Soft Computing	Introduce and use the concepts of Genetic algorithm and its applications to soft computing	Attain an in-depth knowledge in the respective domains augmented through self-learning	To design, implement, and evaluate a computer-based system, process, component, or program for various applications.	Describe Soft Computing Techniques and their roles in building Intelligent Machines
M.Sc. Computer Science	PCCSN20	Principles of Compiler Design	Understand the basic concepts of compiler	Attain an in-depth knowledge in the respective domains augmented through self-learning	To apply fundamental knowledge of computing and science relevant to the discipline.	Explain the concepts of compiler and discuss the Code Generation
M.Sc. Computer Science	PECSE20	Elective IIIA Internet of Things	To understand smart objects and IoT Architectures	Attain an in-depth knowledge in the respective domains augmented through self-learning	Contribute significantly to the research and the discovery of new knowledge and methods in the field of computer science.	Understand the fundamentals of IoT.

M.Sc. Computer Science	PICSB20	Green Computing	Understand the dimensions and goals of Green IT.	Attain an in-depth knowledge in the respective domains augmented through self-learning	To design, implement, and evaluate a computer-based system, process, component, or program for various applications.	Understand the Concept of Green IT.
M.Sc. Computer Science	PICSC20	Distributed Operating System	To expose students to both the abstraction and details of file systems.	Develop research skills through multi/inter/trans-disciplinary perspectives	To design, implement, and evaluate a computer-based system, process, component, or program for various applications.	Understand the architecture of distributed operating system.
M.Sc. Computer Science	PICSE20	Digital Image Processing	To study the image fundamentals and mathematical transforms necessary for image processing	Attain an in-depth knowledge in the respective domains augmented through self-learning.	To Formulate models, design and conduct experiments for interpreting data and critical thinking.	Understand the fundamentals and applications of digital image processing and be aware about intensity transformations.
M.Sc. Computer Science	PICSI20	Embedded System	Understand the Concepts of Embedded Systems.	Attain an in-depth knowledge in the respective domains augmented through self-learning	To apply fundamental knowledge of computing and science relevant to the discipline.	Gain the knowledge of Device Drivers and Interrupts Servicing Mechanism
M.Sc. Electronic Media	PEMA20	Mass Communication and Journalism	To introduce the broad field of mass communication and journalism to students including the models, theories and ethics in the field of media	Attain an in-depth knowledge in the respective domains augmented Through self-learning.	. To obtain wide Knowledge in the area of Electronic Media Production and demonstrate Clear and coherent communication skills.	Review the Basics of Communication and Mass Culture.



M.Sc. Electronic Media	PCEMB20	Broadcasting in India	To initiate students to the field of broadcasting by tracing the evolution, and teaching programme formats and convergence of broadcast media	Attain an in-depth knowledge in the respective domains augmented Through self-learning.	. To obtain wide Knowledge in the area of Electronic Media Production and demonstrate Clear and coherent communication skills.	Examine the Broadcast Regulations and Convergence of Media.
M.Sc. Electronic Media	PCEMC20	Videography	To acquire the knowledge and skill to select and apply those aesthetic elements to translate significant ideas into significant messages through Videography.	Assimilate and apply principles and concepts towards skill development And employability.	To Assimilate and apply Video and Audio editing techniques, Multimedia, and Web Designing Projects towards skill development and employability.	Evaluate the Camera Operation and Lighting Techniques in Indoor Production.
M.Sc. Electronic Media	PCEMD20	Practical I – Video Production	To give a hands-on experience to students in the handling of video-cameras and practice the techniques of Video Production.	Assimilate and apply principles and concepts towards skill development And employability.	To Assimilate and apply Video and Audio editing techniques, Multimedia, and Web Designing Projects towards skill development and employability.	Acquiring and applying knowledge in shots, angles and camera movements.
M.Sc. Electronic Media	PCEME20	Practical II Writing for Broadcast Media	To train the students in the basics of writing for television news; developing a clear, concise and conversational writing style. This is coupled with emphasis on	Integrate issues of social relevance in the field of study.	. To become ethically committed media professionals and entrepreneurs by adhering to Human values, the Indian and the Global cultures.	Explain the basic writing skills for Broadcast Media.

			accuracy, good grammar and strong leads.			
M.Sc. Electronic Media	PEEMA20	Elective I A – Script writing and Direction	To learn in-depth, the writing techniques and basics of film direction	Assimilate and apply principles and concepts towards skill development And employability.	. To Integrate the issues of social and Ethical relevance in the field of Documentary and Short film Production.	Acquiring in depth knowledge about the production stage and its related activities.
M.Sc. Electronic Media	PIEMA20	Independent Elective –Radio and Television News casting	To specialize in Radio and Television and gain analytical, technical and practical skills and be equipped in the broadcast marketplace.	Integrate issues of social relevance in the field of study.	. To obtain wide Knowledge in the area of Electronic Media Production and demonstrate Clear and coherent communication skills.	Evaluating the components of television news and the role of Media professionals
M.Sc. Electronic Media	PCEMF20	Advanced Television Production	To prepare students for professional challenges of today and tomorrow and to expose them to real world production scenario.	Attain an in-depth knowledge in the respective domains augmented Through self-learning.	. To obtain wide Knowledge in the area of Electronic Media Production and demonstrate Clear and coherent communication skills.	Acquiring the knowledge on Production management and production elements.
M.Sc. Electronic Media	PCEMH20	Media Analysis Techniques	To introduce the basic media analysis techniques with practice applications in order to develop a critical perspective of media texts.	Apply critical and scientific approaches to address problems and find solutions.	To Assimilate the critical and scientific approaches to address the Research problems and Find solutions.	Examine the Concept of Sociological and Discourse Analysis.

M.Sc. Electronic Media	PCEMI20	Practical III – Non-Linear Editing	To teach students the art of editing audio and video through Nuendo/ Adobe Audio Editing and Final Cut Pro software respectively and to complete basic exercises in editing.	Assimilate and apply principles and concepts towards skill development And employability.	To Integrate the issues of social and Ethical relevance in the field of Documentary and Short film Production.	Develop the various formats of Programme Production.
M.Sc. Electronic Media	PCEMJ20	Practical IV – Project Production	To train students in shooting and directing a short-film or documentary, by putting into practice the various techniques learned in Video and Audio production and Script writing and Direction.	Persist in life-long learning for personal and societal progress.	To Integrate the issues of social and Ethical relevance in the field of Documentary and Short film Production.	Executing the Production process of Documentary/short film
M.Sc. Electronic Media	PEEMC20	Elective II An Inter-Cultural Communication	To initiate students to the challenges in global communication in the age of cross-culture communication	Develop research skills through multi/inter/trans-disciplinary perspectives.	. To become ethically committed media professionals and entrepreneurs by adhering to Human values, the Indian and the Global cultures.	Evaluating the Relationship Between Intercultural Communications in News Media Production.
M.Sc. Electronic Media	PEEMD20	Elective II B Mobile Communication	It is particularly aimed at equipping with Wireless Communication students with advanced communication	Develop research skills through multi/inter/trans-disciplinary perspectives.	To obtain wide Knowledge in the area of Electronic Media Production and demonstrate Clear and coherent communication skills.	Evaluating the various kinds of wireless network and its uses.

			theory and technologies, vital for a successful career in digital economy.			
M.Sc. Electronic Media	PIEMB20	Independent Elective Electronic Journalism	To provide the insight knowledge about the electronic news production and produce the competent journalists and news producers for the current information world.	Develop research skills through multi/inter/trans-disciplinary perspectives.	To become ethically committed media professionals and entrepreneurs by adhering to Human values, the Indian and the Global cultures.	Compiling the technologies used for electronic journalism
M.Sc. Electronic Media	PCEMK20	Film Studies	To provide in-depth knowledge on films, to develop a critically informed sense of the history and development of film conventions, both mainstream and alternative, and understand the language and use of films.	Persist in life-long learning for personal and societal progress.	To Integrate the issues of social and Ethical relevance in the field of Documentary and Short film Production.	Analysing the concept of film as an art and characteristics of films.
M.Sc. Electronic Media	PCEML20	Communication Research Methods	To teach in detail the need for communication research and the techniques and process of research studies in the field of Media	Develop research skills through multi/inter/trans-disciplinary perspectives.	To Assimilate the critical and scientific approaches to address the Research problems and Find solutions.	Acquiring the knowledge on research report writing and presentation.

M.Sc. Electronic Media	PCEMN20	Practical V – Internship	One-month training in media will expose the students to actual working conditions in any Reputed Production House. This internship is intended to enable students acquire field experience. Students will be required to maintain a journal recording their daily events in detail and submit a report on their activities at the end of the training.	Integrate issues of social relevance in the field of study.	To become ethically committed media professionals and entrepreneurs by adhering to Human values, the Indian and the Global cultures.	Evaluating the Experience gained in the Production house.
M.Sc. Electronic Media	PCEMO20	Practical VI – Basics 3D Graphics and Animations	To enable students to learn the art of 3D animation and modelling using 3D graphics software.	Assimilate and apply principles and concepts towards skill development And employability.	To Assimilate and apply Video and Audio editing techniques, Multimedia, and Web Designing Projects towards skill development and employability.	Compile the Concept of Lighting and Camera effect in 3d Animation.
M.Sc. Electronic Media	PEEME20	Elective III A Technical Business Communication	To initiate students to the types and techniques of organizational communication	Persist in life-long learning for personal and societal progress.	To acquire primary Research skills, and understand the importance of innovations, Incubation and entrepreneurship.	Assessing the importance of business correspondence and the writing skills.

M.Sc. Electronic Media	PIEMC20	Independent Elective Women and Advertising	To provide the basic understanding about the role of women in the field of advertisement and to develop career opportunities.	Persist in life-long learning for personal and societal progress.	To acquire primary Research skills, and understand the importance of innovations, Incubation and entrepreneurship.	Compiling the notable emerging women leaders in Advertising
M.Sc. Electronic Media	PCEMQ20	Development Communication	To enable students to understand the use of media in furthering development of society and the contributions of media professionals in democracy	Develop research skills through multi/inter/trans-disciplinary perspectives.	. To become ethically committed media professionals and entrepreneurs by adhering to Human values, the Indian and the Global cultures.	Evaluating the role communication and empowerment strategies for development communication.
M.Sc. Electronic Media	PCEMS20	Practical VII Research Project	To put to practice the methods of research by undertaking a study in a relevant field of media	Develop research skills through multi/inter/trans-disciplinary perspectives.	To Assimilate the critical and scientific approaches to address the Research problems and Find solutions.	Constructing the desired conclusion and writing the Research Report.
M.Sc. Electronic Media	PCEMT20	Practical VIII – Web Publishing	To teach students the art of designing advanced and dynamic websites using Adobe Dreamweaver software and Java Scripts	Assimilate and apply principles and concepts towards skill development And employability.	To Assimilate and apply Video and Audio editing techniques, Multimedia, and Web Designing Projects towards skill development and employability.	Creating the Web pages and Making Links.
M.Sc. Electronic Media	PEEMG20	Elective IV A Web Designing	To enable students to learn the basic html coding and layout design skills required for creating	Develop research skills through multi/inter/trans-disciplinary perspectives.	To Assimilate and apply Video and Audio editing techniques, Multimedia, and Web	Evaluating the Concept for planning the Website.

			websites		Designing Projects towards skill development and employability.	
M.Sc. Electronic Media	PEEMH20	Elective IVB Women and Media	To enlighten students on the role of media in empowering women in society and the contributions of women in growing the media field	Persist in life-long learning for personal and societal progress.	To acquire primary Research skills, and understand the importance of innovations, Incubation and entrepreneurship.	Acquiring Knowledge about Development of women in Media.
M.Sc. Electronic Media	PIEMD20	Independent Elective- International Communication	To study the global communication to learn about its effects and influence on Globalization.	Develop research skills through multi/inter/trans-disciplinary perspectives.	To become ethically committed media professionals and entrepreneurs by adhering to Human values, the Indian and the Global cultures.	Evaluating the concept of disappearing borders of empowerment
M. Sc. Mathematics	PCMAA20	Modern Algebra	Course designed to demonstrate problem solving skills in the context of Modern Algebra which includes groups and fields.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC	Assess the properties of Groups and Sylow's theorem. Apply field extension property in Algebraic extensions. Get the knowledge of Transcendence $e$ and roots of polynomial. Know about the Galois Theory. Have the knowledge on the concepts of solvability by radicals.

					like CSIR-NET, JRF, GATE, and SET. Develop teaching, research, and technical skills in Mathematics for employment in different sectors and enhance self-learning & life-long learning to compete at the global level and meet social needs.	
M. Sc. Mathematics	PCMAB20	Real Analysis I	The course is designed to provide the concepts of Modern analysis which include Euclidean space of $n$ dimension, metric space, functions of bounded variation, R-S integral, and Lebesgue integral.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET. Develop teaching, research, and technical skills in Mathematics for	Understand $n$ -dimensional space $R^n$ and the metric space whose topology is uniquely determined by the algebraic structure. Deal with the functions of bounded variations and some of their properties. Know about the Riemann-Stieltjes integral and its properties which is a generalization of the Riemann integral. Recognize the necessary and sufficient conditions for the existence of the R-S integral.



					employment in different sectors and enhance self-learning & life-long learning to compete at the global level and meet social needs.	Grasp the class of Lebesgue integrable functions which is defined in terms of upper and lower bounds using the Lebesgue measure of a set.
M. Sc. Mathematics	PCMAC20	Complex Analysis	course designed to demonstrate problem solving skills in the context of Complex analysis which includes analyticity, Cauchy-Riemann relations and harmonic functions.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET. Develop teaching, research, and technical skills in Mathematics for employment in different sectors and enhance self-learning & life-long learning to compete at the	Understand the elementary theory of power series and conformality to perform the linear transformation. Solve the integration in the complex plane by using the fundamental theorems. Be familiar with Cauchy's Integral Formula and the properties of analytical functions. Determine the local mapping and learn the general form of Cauchy's theorem. Have the knowledge on the concepts of solvability by radicals

					global level and meet social needs.	
M. Sc. Mathematics	PCMAD20	Differential Equations	Course designed to demonstrate problem solving skills in the context of Differential Equation which includes Ordinary differential equation and dynamical problems.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET. Develop teaching, research, and technical skills in Mathematics for employment in different sectors and enhance self-learning & life-long learning to compete at the global level and meet social needs.	Understand ordinary differential equations of various type, their solutions, and fundamental concepts about their existence. Obtain solutions of the Homogeneous equation with constant coefficient and Homogeneous equation with analytic coefficient. Comprehend the Bessel functions, Legendre equation, Legendre polynomials and Regular singular points. Know Picard's method of obtaining successive approximations of solutions of first order differential equations. Understand Eigen values and Eigen functions of Sturm-Liouville systems, and obtain the solutions of initial and boundary value problems.

M. Sc. Mathematics	PEMAA20	Elective I A Differential Geometry	Course designed to understand the concept of curvature of a space curve, signed curvature of a plane curve and to compute the curvature and torsion of space curves.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET. Develop teaching, research, and technical skills in Mathematics for employment in different sectors and enhance self-learning & life-long learning to compete at the global level and meet social needs.	Understand the line integrals, deal with differential forms and calculate arc length, curvature of surfaces. Analyze involutes, evolutes and fundamental existence theorem for space curves. Apply problem solving with differential geometry to diverse situations in physics, engineering and in other mathematical contexts. Evaluate the fundamental forms of a surface. Compute the Gaussian curvature, the mean curvature, the curvature lines and the asymptotic lines
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M. Sc. Mathematics	PEMAB20	Elective I B Mathematical Modelling	Course designed to improve the ability to solve problems, including applications outside of mathematics, by means of intuition, creativity, guessing and the experience gained through the study of particular examples and mathematical models	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET. Develop teaching, research, and technical skills in Mathematics for employment in different sectors and enhance self-learning & life-long learning to compete at the global level and meet social needs.	Understand the mathematical basis of common algorithms, and the ability to calculate accurately and efficiently. Demonstrate the use of mathematical reasoning by justifying and generalizing patterns and relationships between the variables in the mathematical models. Formulate and qualitatively analyze mathematical models of a wide range of systems and processes. Recognize the types of Mathematical models and the complexity in each system. Recognize the power of mathematical modelling and analysis and be able to apply their understanding to their further studies.
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M. Sc. Mathematics	PIMAA20	Independent Elective I A Fundamentals of Group Theory	Course designed to demonstrate problem solving skills in the context of fundamentals of groups which includes groups and subgroups.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET. Develop teaching, research, and technical skills in Mathematics for employment in different sectors and enhance self-learning & life-long learning to compete at the global level and meet social needs.	Understand the importance of various types of Groups. Extend the knowledge in some important groups (Homomorphism and Isomorphism) Understand the concepts of fundamentals of finite abelian groups. Acquire benefits of Sylow's theorem and classify the Class equations. Solve various objective type problems using simple concepts.
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M. Sc. Mathematics	PIMAB20	Independent Elective I B Quantitative Aptitude for Competitive Examinations-I	Course designed to enhance the problem-solving abilities and improve the basic mathematical skills	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET.	Understand the concepts of Number System and aptitude problems. Recollect the formulae and solve problems on profit and loss, Interest and Time and Work. Demonstrate basic understanding on data interpretation and exhibit eloquence in verbal reasoning. Identify and respond effectively to questions on clerical ability. Recognize the type of questions and answer them confidently with efficiency in grammar.
M. Sc. Mathematics	PCMAE20	Linear Algebra	Course designed to demonstrate problem solving skills in the context of Linear Algebra which includes linear transformation and finite fields.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the	. Have knowledge on Modules and Canonical form Analyze Jordan and Rational canonical form Understand the concepts of linear transformation and apply it on linear operators Understand the

				and find solutions.	fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET. Develop teaching, research, and technical skills in Mathematics for employment in different sectors and enhance self-learning & life-long learning to compete at the global level and meet social needs.	concepts of finite division ring. Know about division rings having the field in their centers.
M. Sc. Mathematics	PCMAF20	Real Analysis II	The course is designed to provide the concepts of Modern analysis which deals with double sequence and series, Fourier series, sequences, and series of functions.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET. Develop teaching,	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. Determine the properties of the Fourier coefficient and solve the problem for the orthonormal system of functions. Identify the Convergence of a sequence and series of

					research, and technical skills in Mathematics for employment in different sectors and enhance self-learning & life-long learning to compete at the global level and meet social needs.	functions. . Link the multiplication of power series, reciprocal of power series, and real power series. . Deal with the concepts of Directional derivative, Total derivative, Chain rule, Inverse function, and Implicit function theorems.
M. Sc. Mathematics	PCMAG20	Partial Differential Equations and Integral Partial Differential Equations	Course designed to apply partial derivative equation techniques to predict the behavior of certain phenomena	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET. Develop teaching, research, and technical skills in	Apply specific methodologies, techniques and resources to conduct research and produce innovative results. Solve problems of heat conduction equation by using initial and boundary conditions. Use the knowledge of PDEs, to solve one dimensional wave equation by canonical equation. Solve practical PDE and integral PDE problems with finite difference methods. Develop mathematical



					Mathematics for employment in different sectors and enhance self-learning & life-long learning to compete at the global level and meet social needs.	skills to solve problems involving convolutions.
M. Sc. Mathematics	PCMAH20	Mechanics	Course designed to demonstrate problem solving skills in the context of Mechanics which includes Physics concepts and its applications to Mathematics.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET. Develop teaching, research, and technical skills in Mathematics for employment in different sectors and enhance self-learning & life-long learning to compete at the	Define and understand basic mechanical concepts related to discrete and continuous mechanical systems. Describe and understand the motion of a mechanical system using Lagrange's equation. Use Euler-Lagrange equation to find stationary paths and understanding the theory of variational principles. Acquire knowledge on Hamilton's principle and Hamilton's equation. Study the concepts of canonical transformations and solve the transformations by using Lagrange and

					global level and meet social needs.	Poisson brackets.
M. Sc. Mathematics	PEMAC20	Elective II A LaTeX and MATLAB	Course designed to demonstrate the ability to type research papers in Latex Software in a fluent manner and to use and write the script files using MATLAB software	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Have the capability to apply the programming concepts of JAVA, MATLAB, and R language to model, formulate and solve real-life problems.	Understand the mathematical basis of common algorithms in Latex. Demonstrate the use of mathematical equations, tables and figures in Latex. Demonstrate understanding and use of MATLAB software Construct one dimensional array, two dimensional arrays and basic functions in MATLAB. Recognize the power of mathematical modelling and analysis using MATLAB and be able to apply their understanding to their further studies.

M. Sc. Mathematics	PEMAD20	Elective II B Fluid Dynamics	Course designed to understand the concepts of fluid motion, equations of motion of a fluid, three dimensional flows and viscous flows and apply it in practical situations.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET. Develop teaching, research, and technical skills in Mathematics for employment in different sectors and enhance self-learning & life-long learning to compete at the global level and meet social needs.	Understand the concepts of fluid flow Identify pressure of fluid in different kind of Motion Analyse the topics of Axi-Symmetric Flows, Stoke's Stream Function Determine the Stream Function, the Complex Potential for Two-Dimensional, Irrotational, Incompressible Flow. 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.
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M. Sc. Mathematics	PIMAC20	Independent Elective 2 A Fundamentals of Ring Theory	Course designed to demonstrate problem solving skills in the context of Fundamentals of Ring theory which includes Rings, Sub rings and Types of Rings.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET.	Demonstrate various characteristic of Rings. Extend the knowledge in Ideals, Fields of Quotients and polynomial rings. Validate primitive polynomials and Irreducible Polynomials. Acquire the knowledge in Field theory. Solve various types of problems in finite fields.
M. Sc. Mathematics	PIMAD20	Independent Elective 2 B Quantitative Aptitude for Competitive Examinations-II	Course designed to introduce quantitative methods and techniques for effective decisions— making and solve aptitude problems.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET. Develop teaching,	Understand and solve aptitude problems. Identify and develop the techniques to solve the problems using different methods. Demonstrate procedural fluency with real number arithmetic operations and use those operations to represent real-world scenarios and to solve stated problems. Solve linear equations, graph and interpret linear models, and read and apply

					research, and technical skills in Mathematics for employment in different sectors and enhance self-learning & life-long learning to compete at the global level and meet social needs.	formulas. Ability to face the competitive examinations with a clear approach.
M. Sc. Mathematics	PCMAI20	Topology	To introduce the topological spaces which provide a general framework for the study of convergence, continuity, and compactness and to train the students to develop analytical thinking.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET. Develop teaching, research, and technical skills in Mathematics for employment in different sectors and enhance self-learning	. Understand basis as a collection of basic open sets and the concepts of continuous functions and their properties in topological spaces. . Determine the topology generated by the given basis, connectedness, path connectedness of the product of an arbitrary family of spaces. . Grasp the concept of compactness which is the generalization to topological spaces of the property of closed and bounded subsets of the real line. . Deal with the countability and separation axioms . Know the theorems

					& life-long learning to compete at the global level and meet social needs.	with the conditions under which a topological space can be embedded in metric space.
M. Sc. Mathematics	PCMAJ20	Numerical Analysis	To develop the skills in solving Numerical problems and apply them in other disciplines and in wider areas of research.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET. Develop teaching, research, and technical skills in Mathematics for employment in different sectors and enhance self-learning & life-long learning to compete at the global level and meet social needs.	Find the solution in Numerical, Algebraic and transcendental equations. Solve the set of algebraic equations by direct and iterative methods. Analyze the values of a function for any intermediate value of the independent variable. Compute the numerical solution of various types of ordinary differential equations. Acquire the numerical solution of Partial Differential Equations.

M. Sc. Mathematics	PCMAK20	Probability Theory	To understand the concept of random variables, characteristic functions, probability distribution, and limit theorem and to solve real-world problems.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET. Develop teaching, research, and technical skills in Mathematics for employment in different sectors and enhance self-learning & life-long learning to compete at the global level and meet social needs.	<ul style="list-style-type: none"> <li>. Characterize probability models and function of random variables based on single and multiple random variables.</li> <li>. Evaluate and apply expected value, moments and understand the concept of Chebyshev inequality.</li> <li>. Analyze the concepts of characteristic functions and its properties.</li> <li>. Apply probability distribution to solve the real world problems.</li> <li>. Understand the concept of limit theorem and its applications.</li> </ul>
M. Sc. Mathematics	PCMAL20	Operations Research	To understand the mathematical tools used in Operations Research that are needed to solve the optimization	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and	<ul style="list-style-type: none"> <li>. Determine the feasible solution using Revised simplex method, Duality and bounded variable algorithm.</li> </ul>

			problems which plays important role in business management.	principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	simulation results. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET. Develop teaching, research, and technical skills in Mathematics for employment in different sectors and enhance self-learning & life-long learning to compete at the global level and meet social needs.	. Understand the theoretical background of queuing systems and solve the real world problems. . Analyze the Inventory models and solve EOQ models. . Apply dynamic programming to solve real world problems. . Solve constrained and unconstrained optimization problems using Hookes and Jeeves algorithm, Gradient projection, Lagrange multipliers, Kuhn-Tucker conditions etc.
M. Sc. Mathematics	PEMAE20	Elective III A Programming with Java	To develop knowledge in a platform-independent High-Level Programming Language Java to handle complex projects in advanced technologies.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches	Have the capability to apply the programming concepts of JAVA, MATLAB, and R language to model, formulate and solve real-life problems.	Understand the benefits and applications of OOP and distinguish C++ and JAVA. Gain knowledge about operators and its types. Define decision making statements and solve problems based on it. Develop the program



				to address problems and find solutions.		by manipulating classes and methods in the Java programming language. Explore the Java programming by using arrays.
M. Sc. Mathematics	PEMAG20	Elective III B Programming with R	To learn the advanced language R that performs various complex statistical computations and calculations.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Have the capability to apply the programming concepts of JAVA, MATLAB, and R language to model, formulate and solve real-life problems.	Familiarize with basics of R software and built in function of R.. Identify the characteristics of datasets and plot the datasets in R using graphical methods. Demonstrate understanding and use of for loop, if statement and break. Implement the learning techniques and computing environment that are suitable for the applications under consideration. Compute vectors and matrices, matrix inverse, eigen values and eigen vectors.

M. Sc. Mathematics	PEMAF20	Elective Practical Java	To design and program stand-alone Java applications.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Have the capability to apply the programming concepts of JAVA, MATLAB, and R language to model, formulate and solve real-life problems.	Implement programs with classes. Write programs that perform operations using arrays. Develop the program by decision making statements and solve problems based on it. Illustrate basic programming concepts such as program flow and syntax of a high-level general purpose language. Take a problem, figure out the algorithm to solve it and write the code.
M. Sc. Mathematics	PEMAH20	Elective Practical R	To use R for descriptive statistics and write simple programs in R.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Have the capability to apply the programming concepts of JAVA, MATLAB, and R language to model, formulate and solve real-life problems.	Familiarize with basics of R software and built in function of R. Identify the characteristics of datasets and plot the datasets in R using graphical methods. Demonstrate understanding and use data frames. Implement the learning techniques and computing environment that are

						suitable for the applications under consideration. Compute vectors and matrices, matrix inverse, eigen values and eigen vectors.
M. Sc. Mathematics	PIMAE20	Independent Elective 3 A Skill Enhancement in Real and Complex Analysis I	To develop in-depth knowledge in analysis and problem-solving skills to work out unsolved problems using various tricks to clear CSIR NET, SET, JRF, and GATE examinations. Also, to train the students in self-paced independent learning.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET.	Utilize the basics of set theory and number system. Acquire the knowledge of Sequences and Series. Compute the Limit, Continuity and Differentiation of functions. Analyze the Transcendental functions such as Exponential, Trigonometric and Hyperbolic Functions. Evaluate the integral by Cauchy's Integral formula.
M. Sc. Mathematics	PIMAF20	Independent Elective 3 B Fundamentals of Research Methodology and Statistics I	To develop in-depth knowledge in analysis and problem-solving skills to work out unsolved problems using various tricks to clear CSIR NET, SET, JRF, and	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Inculcate research-level thinking in the	Utilize the basic concepts of Research. Prepare the review of literature. Plan the various types of survey studies and sampling design. . Study the case of Historical methods and

			GATE examinations. Also, to train the students in self-paced independent learning.	and employability. Apply critical and scientific approaches to address problems and find solutions.	field of pure and applied mathematics and apply theoretical knowledge to write the dissertation using the Mathematical software LaTeX.	Philosophical methods. Classify the experimental procedure and case study of various groups.
M. Sc. Mathematics	PCMAM20	Functional Analysis	To introduce the main structure theorems of functional analysis and to study the concepts of Banach space, Hilbert space, Banach algebra, and commutative Banach algebra.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET. Develop teaching, research, and technical skills in Mathematics for employment in different sectors and enhance self-learning & life-long learning	Gain the knowledge of complete normed linear space and the Hahn Banach theorem. Understand the open mapping theorem, closed graph theorem, and uniform boundedness theorem and determine the concept of complete inner product space and its properties. Classify the operators into adjoint, self-adjoint, unitary and normal. Know the basic properties of Banach Algebra and the spectrum of an element in a Banach algebra. Represent commutative Banach algebras as algebras of

					to compete at the global level and meet social needs.	continuous functions.
M. Sc. Mathematics	PCMAN20	Calculus of Variations	To develop an understanding of variational problems with fixed boundaries and moving boundaries.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET. Develop teaching, research, and technical skills in Mathematics for employment in different sectors and enhance self-learning & life-long learning to compete at the	Understand the functional and its applications. Also use the Euler-Lagrange equation to find the differential equations for stationary paths. Describe Du Bois-Reymond problem and solve it. Solve differential equations for stationary paths subject to boundary conditions. Give an account of the foundations of calculus of variations and its applications in Mathematics and Physics. Apply direct methods to solve variational problems.

					global level and meet social needs.	
M. Sc. Mathematics	PCMAO20	Mathematical Statistics	To impart knowledge of statistics in various areas and to apply problem-solving techniques to solve real-world events.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET. Develop teaching, research, and technical skills in Mathematics for employment in different sectors and enhance self-learning & life-long learning to compete at the global level and meet	Understand the sample moments and their functions and analyze chi-square, Student-t, Fishers-Z distributions. Demonstrate the knowledge of the properties of parametric testing procedures. 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. Learn the basic components of hypothesis testing and perform hypothesis test on population means. Understand the basic terms used in

					social needs.	design of experiments and use appropriate experimental designs to analyze the experimental data.
M. Sc. Mathematics	PCMAP20	Project	Project-based learning gives an opportunity for the students to self-study. It encourages critical, analytical, and logical thinking in student, and expand their knowledge to gain an accurate and deep understanding of their work.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET. Develop teaching, research, and technical skills in Mathematics for employment in different sectors and enhance self-learning & life-long learning to compete at the global level and meet social needs.	

M. Sc. Mathematics	PEMAI20	Elective IV A Graph Theory	To understand the graph theoretical concepts that can model and study many real-world problems which can be applied in a wide range of disciplines and in the area of research.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET. Develop teaching, research, and technical skills in Mathematics for employment in different sectors and enhance self-learning & life-long learning to compete at the global level and meet social needs.	Identify subgraphs, cycles, paths and connection in graphs. Analyze the cut vertices, cut edges and bonds in trees. Distinguish between the Hamiltonian and Eulerian graph. Explain the concepts of matchings and coverings in bipartite graphs. Understand the concepts of coloring and planar graphs.
M. Sc. Mathematics	PEMAJ20	Elective IV B Fuzzy Set Theory	To make use of a special fuzzy set to model reality better than traditional theories and to develop a research	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and	. Distinguish between crisp set and fuzzy set through bi-valued logic and infinite-valued logic. . Know about the most



			approach that can deal with problems relating to ambiguous situations.	principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	simulation results. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET. Develop teaching, research, and technical skills in Mathematics for employment in different sectors and enhance self-learning & life-long learning to compete at the global level and meet social needs.	widely used standard fuzzy set operations. . Formulate the fuzzy number which is a special case of a convex, normalized fuzzy set of the real line. . Explore the fuzzy relation and its operations which is the generalization of crisp relation. . Analyze the methods of decision making in fuzzy environment and their applications in LPP.
M. Sc. Mathematics	PIMAG20	Independent Elective 4 A Skill Enhancement in Real and Complex Analysis II	Understand the basic concepts of the research methodology to analyze real-life problems using Statistical concepts. Also, to train the students in self-paced independent learning.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches	Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET.	Analyze the theory of Partial derivatives. Compute Riemann Sum and Riemann integral. Evaluate the concepts of Lebesgue measure and Lebesgue integral. Identify the Connectedness and Compactness. Calculate the Residues

				to address problems and find solutions.		of functions and improve the knowledge of conformal mappings.
M. Sc. Mathematics	PIMAH20	Independent Elective 4 B Fundamentals of Research Methodology and Statistics II	Understand the basic concepts of the research methodology to analyze real-life problems using Statistical concepts. Also, to train the students in self-paced independent learning.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Inculcate research-level thinking in the field of pure and applied mathematics and apply theoretical knowledge to write the dissertation using the Mathematical software LaTeX.	. Analyze the needs and purpose of Experimental design. Prepare and Analyze the Questionnaire and compute the Statistical analysis of data. Analyze the statistical data and research report. Acquire the knowledge of Action research and educational research. Understand the basic measures of variability, dispersion and correlation.
M.Sc. Physics	PCPHG20	Practical I General	To understand the concepts and principles behind in experimental physics	Attain an in-depth knowledge in the respective domains augmented through self-learning. Apply critical and scientific approaches to address problems and find solutions.	Understand the various methods in the respective field	Measure electrical, magnetic and thermodynamical properties of solids. Develop the skills to take an accurate reading and analyze the results of experiments and to solve problems while handling with

						analytical instruments.
M.Sc. Physics	PCPHH20	Practical II Electronics	To understand concepts of sequential circuits and to analyze sequential systems.	Apply critical and scientific approaches to address problems and find solutions.	Gain knowledge about various applications.	Develop a digital logic and apply it to solve real life problems.
M.Sc. Physics	PCPHO20	Practical III Advanced General Experiments	To provide the student hands-on experiences to conduct advanced general experiments in laboratory in lieu with the theory taught in the class.	Apply critical and scientific approaches to address problems and find solutions. Develop research skills through multi/inter/trans-disciplinary perspectives.	Attain in depth knowledge on various areas of Physics. Understand the various methods in the respective field.	Analyse the properties (electric, magnetic, nuclear and dielectric) of solids/liquids. Apply acquired knowledge to the analysis of experimental data.
M.Sc. Zoology	PCZOE20	Applied Entomology	Create awareness on pest and their control measures.	Persist in life-long learning for personal and societal progress.	Have in-depth knowledge on animal diversity from acellular to multicellular level of organization and apply the learnt concepts in all the fields of Zoology.	Identify the pest in different cash crops and the mode of infection. Analyze the pest species of vegetables, fruits, stored grains and household pests. Categorize the different insect pests and vectors of livestock. Explain the classification of insecticides and the mode of action.

						Apply appropriate method of insect pest management and integrated pest management.
M.Sc. Zoology	PIZOD20	Independent Elective IIB Eco Energetics and Ecological Methods	Enable the students to gain knowledge about ecosystem	Attain an in-depth knowledge in the respective domains augmented through self-learning.	Gain ability to develop research aptitude/creative thinking in contemporary and current fields of interest.	<p>Explain the structure and functions of ecosystem.</p> <p>Discuss the productivity and methods of measuring productivity.</p> <p>Summarize about sampling and extraction techniques.</p> <p>Describe the methods of wild life population studies.</p> <p>Categorize the planktons, method of collection, preservation and morphological identification.</p>
M.Sc. Zoology	PEZOE20	Elective III A Clinical Laboratory Techniques	Apply the concepts and techniques in medical field.	Assimilate and apply principles and concepts towards skill development and employability.	Conduct their duty with at most honesty and adhere to ethical protocols. On the whole, be agents of social transformation to up bring their society at large.	<p>Develop technical knowledge in laboratory practices and apparatus maintenance.</p> <p>Examine blood composition and basic hematological techniques.</p> <p>Justify the pathology of diseases caused by</p>

						parasites, virus, bacteria & fungus. Discuss experimental techniques and methods of urine analysis. Analyze the results of physical, microscopic and biochemical analysis of body fluids.
M.Sc. Zoology	PEZOF20	Elective III B Fisheries Sciences	Help in identifying, conserving and culturing various species of fishes.	Assimilate and apply principles and concepts towards skill development and employability.	Have in-depth knowledge on animal diversity from acellular to multicellular level of organization and apply the learnt concepts in all the fields of Zoology.	Explain the morphology and physiology of Indian fishes. Analyze the environmental and nutritional requirements of fishes. Understand the types, distribution and scope of inland fisheries. Impart theoretical knowledge on surveying methods of fishery resources. Acquire knowledge on various threats and conservation strategies of Indian fishes.
M.Sc. Zoology	PIZOE20	Independent Elective III A Radiation Biology	Apply the principles and technologies in treatments.	Apply critical and scientific approaches to address problems and find solutions.	Gain ability to develop research aptitude/creative thinking in contemporary and	Apply the fundamentals of radiation biology. Explain the effects of Radiation on DNA and

					current fields of interest.	its effects. Analyze the radiation exposure and response. Asses the role of radiation in carcinogenesis. Explain radio therapy, protection and precaution in using radioisotopes.
M.Sc. Zoology	PIZOF20	Independent Elective IIIB Dairying	Enable the students to gain knowledge about the techniques and processing of milk	Assimilate and apply principles and concepts towards skill development and employability.	Conduct their duty with at most honesty and adhere to ethical protocols. On the whole, be agents of social transformation to up bring their society at large.	Discuss the development and management of dairying. Explain properties of milk and its composition. Describe various periods of milking, variations in compositions and equipments used in milking. Discuss entry of bacteria into milk and types of bacteria. Explain various methods of pasteurization.

M.Sc. Microbiology	PCMBB20	Food, Agriculture and Environmental Microbiology	The syllabus deigned makes the learners familiarize on Food, Agriculture and Environmental aspects of Microbiology	Attain an in-depth knowledge in the respective domains augmented through self-learning.	Acquaint a broader knowledge in the concepts of Taxonomy, molecular biology, immunology, food, environment and agricultural Microbiology, nanotechnology, forensic science and genetic engineering.	Analyse the principles in food preservation. Communicate diseases associated with food. Discuss the role of microorganisms in soil and microbial interaction. Utilize the knowledge on biogeochemical cycles to produce biofertilizers. Assess information about microbiological quality of air and water.
M.Sc. Microbiology	PCMBC20	Immunology and Immunotechnol ogy	The course is designed to provide in depth knowledge on immune cells, immune system- its function and hybridoma technology	Attain an in-depth knowledge in the respective domains augmented through self-learning.	Acquaint a broader knowledge in the concepts of Taxonomy, molecular biology, immunology, food, environment and agricultural Microbiology, nanotechnology, forensic science and genetic engineering.	Outline the types of immune response and discuss the role of lymphoid organs in immunity. Compile immunoglobulins and antigens. Communicate the importance of MHC in organ transplantation. Analyse the allergic responses by the immune system leading to hypersensitive conditions and auto immune disorders.

						Plan immunization schedule.
M.Sc. Microbiology	PEM.B.A20	Petroleum Microbiology	The syllabus is framed to provide an in depth understanding on the microbial communities residing in the oil reservoirs and other hydrocarbon resource environments.	Attain an in-depth knowledge in the respective domains augmented through self-learning.	Attain an in-depth knowledge in the anatomy and physiology of a repertoire of microorganisms with its beneficial and harmful associations.	<p>Outline the importance of petroleum Microbiology and predict the impact of the microbial communities in various petroleum fields.</p> <p>Design the microbial solutions to the Microbiology related problems in the petroleum industry.</p> <p>Discuss solutions to enhance production of oil/energy by applying concepts of production related petroleum Microbiology.</p> <p>Utilize biotechnological aspects in remediation of oil spills.</p> <p>Use apparatus for the detection of living microbial contaminants in petroleum products.</p>



M.Sc. Microbiology	PEMBB20	Economic Microbiology	The syllabus is designed to introduce entrepreneurial skills among students to become entrepreneurs and to make their idea a reality.	Develop research skills through multi/inter/trans-disciplinary perspectives.	Incorporate effective career with marketing, project management, business development or venture capital within the biotech, pharmaceutical, medical technology or related fields.	Utilize microorganisms as biofertilizers and for vermicomposting. Analyse microbial cells as fermented products. Use yeast in and as food and feed. Demonstrate mushroom cultivation and its storage. Discuss biotechnological applications of microalgae.
M.Sc. Microbiology	PIM.B.A20	Public Health Microbiology	The syllabus is designed to provide in depth knowledge about significance of public health at theoretical and practical levels.	Attain an in-depth knowledge in the respective domains augmented through self-learning.	Attain an in-depth knowledge in the anatomy and physiology of a repertoire of microorganisms with its beneficial and harmful associations.	Explain the significance of public health. Communicate the mode of transmission of human diseases. Discuss the role of medically important pathogens and the diseases caused. Outline the vector complex interactions between the pathogens and host. Create awareness on hospital-acquired infections, prevention and its control measures.

M.Sc. Microbiology	PCMBF20	Industrial and Pharmaceutical Microbiology	The course provides an in depth understanding about industrially important organisms, strain improvement and production of major products.	Assimilate and apply principles and concepts towards skill development and employability.	Incorporate effective career with marketing, project management, business development or venture capital within the biotech, pharmaceutical, medical technology or related fields.	Outline the importance of production strain in industries. Discuss on fermenters and fermentation process. Describe the upstream and downstream processing. Analyse the steps involved in vaccine, toxoid and antisera production and evaluate the standardization of antiseptics and disinfectants. Assess good practice and regulation involved in utilizing microbial product for pharmaceutical applications.
M.Sc. Microbiology	PIMBB20	Forensic Science	The course is designed to provide understanding of the scientific principles of crime scene investigation and reconstruction, including evidence collection and preservation.	Integrate issues of social relevance in the field of study.	Acquaint a broader knowledge in the concepts of Taxonomy, molecular biology, immunology, food, environment and agricultural Microbiology, nanotechnology, forensic science and genetic engineering.	Evaluate the methods underpinning forensic science, from crime scene investigation to report evidential value within a case. Reflect on the use of various divisions of forensic science in the crime investigation. 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. Utilize psychological principles in crime investigation.
M.Sc. Microbiology	PCMBJ20	Advanced Microbiology	The course provides the learners an in-depth understanding on the advanced aspects of Microbiology.	Assimilate and apply principles and concepts towards skill development and employability.	Incorporate effective career with marketing, project management, business development or venture capital within the biotech, pharmaceutical, medical technology or related fields.	Utilize microorganisms in the preparation of cosmetics. Evaluate the biological potential in samples return from satellites and solar system. Discuss the role of antimicrobial fabrics, carpets, tiles and colorants.
M.Sc. Microbiology	PEMBF20	Fungal biotechnology and Bioprospecting	This course is designed to provide an exposure to the students about the potential of fungi as food and in field of biotechnology as source of different enzymes, secondary metabolites, vitamins,	Assimilate and apply principles and concepts towards skill development and employability.	Incorporate effective career with marketing, project management, business development or venture capital within the biotech, pharmaceutical, medical technology or related fields.	Perform screening and strain development for production of different bio-molecules. Design a bioreactor with special emphasis on fungal systems. Comprehend about different secondary metabolites of fungal origin.

			polysaccharides, polyhydric alcohols, pigments, lipids, glycolipids, biofertilizers and biopesticides.			Demonstrate methods of recombinant technology with special emphasis on fungal system. Explain the role of fungi in food and feed industries.
M.Sc. Microbiology	PCMBL20	Microbial Gene Technology	the syllabus of the course provides an insight on the concepts of genetic engineering and techniques employed in recombinant DNA technology.	Attain an in-depth knowledge in the respective domains augmented through self-learning.	Acquaint a broader knowledge in the concepts of Taxonomy, molecular biology, immunology, food, environment and agricultural Microbiology..	Utilize the tools and techniques of genetic engineering and the role of DNA manipulative enzymes. Compile DNA sequencing methods.
M.Sc. Microbiology	PEMBG20	Microbial Nanotechnology	The syllabus is designed to provide in depth knowledge on microbial bio nanotechnology.	Attain an in-depth knowledge in the respective domains augmented through self-learning.	Acquaint a broader knowledge in the concepts of Taxonomy, molecular biology, immunology, food, environment and agricultural Microbiology, nanotechnology, forensic science and genetic engineering.	Describe about molecular nanotechnology and microbial synthesis of nanoparticles. Discuss on types, function and characterization of nanoparticles. Comprehend the use of nanoparticles in cancer therapy and in biology.

M.Sc. Microbiology	PCMBM20	Bioethics and Biosafety	The course is designed to educate the learners on Biosafety concerns at the level of individuals, institution, society, region, country and the world.	Develop research skills through multi/inter/trans-disciplinary perspectives.	Develop ability to independently carry out a complete scientific work process with research ethics, including the understanding of theoretical background, hypothesis generation, collection and analysis of data, and interpretation and presentation of results.	Outline the principles of bioethics and explain the biosafety concerns with safeguard measures. Compile the BSA statement for the industrial production of pharmaceuticals. Adapt the WHO quality standards in food process technology. Discuss on the global scenario of patenting. Comprehend the forms of patents, patentability and process of patenting.
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*S. Parvathi*

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