

AUXILIUM COLLEGE (Autonomous)

(Accredited by NAAC with A+ Grade with a CGPA of 3.55 out of 4 in the 3rd 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: GLOBAL NEEDS

PROGRAMME	Course	Title of Course	Description	PO	PSO	СО
	Code					
B.A. English	UENGA20	General English	The course offers a	Acquire and apply	Appreciate life,	Discern (figure out)
		Paper-I	comprehensive outlook of	analytical, critical	think critically, and	effective ways of
			Life coping principles and	and creative thinking,	develop positive,	communication with
			their vision to establish	and problem-solving	interpersonal	etiquette
			Humaneness through	skills	relationship with	
			poetries and short stories		fellow humans.	
			that offer students the			
			space for language-			
			learning and emulation of			
			life values that are on			
			demand across the globe			
			and the country.			
B.A. English	UENGB20	General English	The prescribed course	Appreciate	Apply the	Outline the values and
		Paper-II	units highlight the	biodiversity and	knowledge of form,	ideas from the
			language skills as well as	enhance eco-	structure, history and	prescribed texts in

			life-skills centered around	consciousness for	contextual cultural	self-made sentences
			Eco-consciousness,	sustainable	diversity and	with accuracy, clarity
			tolerance and acceptance	development of the	comprehend the	and fluency.
			of diverse cultures and	society.	applications of the	
			human characteristics		English Language in	
					practice.	
B.A. English	UENGC20	General English	As a means of language-	Emulate positive	Remember the	Enable students to be
		Paper-III	learning the course	social values and	principles of	aware of the
			explores contemporary	exercise leadership	Literature in general	contemporary social
			issues in the context of	qualities and team	and English	issues of national and
			human values, human	work.	Literature in	global importance.
			rights and sustainable		particular and	
			development goals		understand its	
					typological, critical,	
					socio cultural aspects	
B.A. English	UENGD20	General English	Explores the world of the	Acquire and apply	Appreciate life,	Relate with real life
		Paper-IV	minds, its prejudices and	analytical, critical	think critically, and	situations by reading
			attitudes, and its quest for	and creative thinking,	develop positive,	the literary text from
			peace	and problem-solving	interpersonal	the past.
				skills	relationship with	
					fellow humans	
B.A. English	UCENA20	An Introduction	The course introduces	Attain knowledge	Remember the	Recognize
		to Literary	students to the	and understand the	principles of	fundamental literary
		Studies	fundamentals of literary	principles and	Literature in general	forms, terms,
			forms, their evolution	concepts in the	and English	expressions, techniques and the
			since inception and their	respective discipline.	Literature in	outline of English
			significant practitioners in	Effectively	particular and	literary studies from

			the history of English literature, that is of global relevance in terms of higher studies, research and employment	communicate general and discipline- specific information, ideas and opinions.	understand its typological, critical, socio cultural aspects	16th to 20th century. Explain various genres such as poetry, essays, dramas and ballads
B.A. English	UCENB20	English Pronunciation: Theory and Practice	The course introduces students to the sounds of English language to the effect that they remember, identify, use and classify the sounds of English Language and appropriate their pronunciation to that of standard English Pronunciation.	Attain knowledge and understand the principles and concepts in the respective discipline. Effectively communicate general and discipline-specific information, ideas and opinions. Attain fluency, accuracy and a good command in the four skills (listening, speaking, reading and writing) of English Language. Apply the knowledge of form, structure, history and contextual cultural diversity and comprehend the applications of the English Language in practice	Attain fluency, accuracy and a good command in the four skills (listening, speaking, reading and writing) of English Language Apply the knowledge of form, structure, history and contextual cultural diversity and comprehend the applications of the English Language in practice	Demonstrate understanding of the structural organization of speech sounds of English language and the subtle variations in its pronunciationIllustrate , identify and label the parts of the human articulator system Remember the English vowels, consonants and diphthongs along with their corresponding (IPA) Phonetic symbols

B.A.English	UALSC20	Allied -	The course seeks to impart	Attain knowledge	Attain fluency,	Demonstrate adequate
_		Language Skills	the essential skills	and understand the	accuracy and a good	efficiency in oral and
		for	required to communicate	principles and	command in the four	written
		Communication	in English as it is the	concepts in the	skills (listening,	communication in
			global link language and is	respective discipline.	speaking, reading	English
			the medium required for	Effectively	and writing) of	Demonstrate
			employment and research	communicate general	English Language	knowledge of the
				and discipline-	Apply the	structure of English
				specific information,	knowledge of form,	language
				ideas and opinions.	structure, history and	Understand the
				Attain fluency,	contextual cultural	process of
				accuracy and a good	diversity and	communication in
				command in the four	comprehend the	general and
				skills (listening,	applications of the	communication in
				speaking, reading and	English Language in	English
				writing) of English	practice	Utilize the knowledge
				Language Apply the		and skills of English
				knowledge of form,		language to get
				structure, history and		employment
				contextual cultural		
				diversity and		
				comprehend the		
				applications of the		
				English Language in		
				practice		

B.A.English	UAEEG20	Allied II:	The course familiarises	Attain knowledge	Attain fluency,	Recall the basic rules
		Elements of	students with the	and understand the	accuracy and a good	of English grammar
		English	essentials of English	principles and	command in the four	Explain basic
		Grammar	Grammar in order to	concepts in the	skills (listening,	concepts of grammar
			enable them to attain	respective discipline.	speaking, reading	Apply rules related to
			accuracy in the learning	Effectively	and writing) of	structure and correct
			and use of English	communicate general	English Language	pattern of English
			language and fluency, that	and discipline-	Apply the knowledge	language
			is of global relevance in	specific information,	of form, structure,	Use English Language
			terms of higher studies,	ideas and opinions.	history and	with grammatical
			research and employment	Attain fluency,	contextual cultural	accuracy
				accuracy and a good	diversity and	
				command in the four	comprehend the	
				skills (listening,	applications of the	
				speaking, reading and	English Language in	
				writing) of English	practice	
				Language		
				Apply the		
				knowledge of form,		
				structure, history and		
				contextual cultural		
				diversity and		
				comprehend the		
				applications of the		
				English Language in		
				practice		

B.A.English	UCENE20	Elizabethan	The course introduces the	Attain knowledge	Remember the	Identify the literary
		Literature	social and cultural	and understand the	principles of	history of Elizabethan
			background of Elizabethan	principles and	Literature in general	Age
			Age in English Literature,	concepts in the	and English	Discuss the major
			seminal works of	respective discipline.	Literature in	themes and forms in
			Elizabethan writers and its	Effectively	particular and	the Literature of the
			age-specific nuances in	communicate general	understand its	Elizabethan period
			literary production, that is	and discipline-	typological, critical,	Analyse the
			of global relevance in	specific information,	socio cultural aspects	Elizabethan writing as
			terms of higher studies,	ideas and opinions.		both register and
			research and employment			response to historical,
						social and political
						development of the
						era.
B.A. English	UCENF20	American	The course introduces the	Attain knowledge	Remember the	Identify characteristic
		Literature	historical, social and	and understand the	principles of	forms or styles of
			cultural background of	principles and	Literature in general	expression during
			American Literature in	concepts in the	and English	different historical
			English, seminal works of	respective discipline.	Literature in	periods in different
			American writers and		particular and	regions.
			critics, that is of global		understand its	Discuss the issues,
			relevance in terms of		typological, critical,	conflicts,
			higher studies, research		socio cultural aspects	preoccupations and
			and employment,			themes of various
						literary texts.
						Examine the
						historical, cultural,

B.A.English	UCENG20	Neo-Classical Literature	The course introduces the social and cultural background of Neo-Classical Age in English Literature, seminal works of Neo-Classical writers and its age-specific nuances in literary production	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	rhetorical contexts in which the literary texts were written. Analyze literary works as expressions of individual or communal values within the social, political, cultural or religious contexts of different literary periods. Recall the historical, social and biographical details of the Era Interpret the contextual structure of the literary texts of the Era Apply Critical Perspectives on the Literary Works Appreciate the contribution of the Texts and explore the social, historical,
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						artistic and literary
						influences of the
						period.
						Analyse insights to
						the various literary
						genres of the Era
B.A.English	UCENH20	Romantic	The course introduces the	Attain knowledge	Remember the	Locate the historical
		Literature	social and cultural	and understand the	principles of	and cultural context of
			background of Romantic	principles and	Literature in general	English Romanticism.
			Literature in English,	concepts in the	and English	Discuss the traits of
			seminal works of	respective discipline.	Literature in	Romanticism with
			Romantic writers and its		particular and	emphasis on concepts
			age-specific nuances in		understand its	of self, imagination
			literary production that is		typological, critical,	and the unconscious
			of global relevance in		socio cultural aspects	Apply historical,
			terms of higher studies,			social, philosophical
			research and employment			and political contexts
						to interpret texts
B.A.English	UCENI20	Shakespeare	The course familiarises	Attain knowledge	Remember the	Identify the seminal
			students with the literary	and understand the	principles of	works of Shakespeare
			works of Shakespeare, its	principles and	Literature in general	Understand the style
			critical and cultural	concepts in the	and English	and literary devices
			implications and its	respective discipline.	Literature in	used by him Analyse
			influence on readers,	Effectively	particular and	the relevance of
			writers and translators,	communicate general	understand its	Shakespeare in
			that is of global relevance	and discipline-	typological, critical,	Elizabethan Drama
			in terms of higher studies,	specific information,	socio cultural aspects	and later beyond the

			research and employment	ideas and opinions.		confines of time and space Evaluate Criticism of Shakespeare's works from critics from various timeframes.
B.A.English	UCENJ20	Victorian Literature	The course introduces the social and cultural background of Victorian Literature in English, seminal works of Victorian writers and its age-specific nuances in literary production, that is of global relevance in terms of higher studies, research and employment	Attain knowledge and understand the principles and concepts in the respective discipline. Effectively communicate general and discipline-specific information, ideas and opinions.	Remember the principles of Literature in general and English Literature in particular and understand its typological, critical, socio cultural aspects	Locate the realm of the Victorian era in the field of Historical Literary Studies Discuss the shift/transition from an Idealistic to the Realistic World of Living Examine different forms/genres personalized by Victorian writers with the predominant themes of the Age
B.A.English	UCENL20	Twentieth Century	The course introduces students to the literature in English produced in the twentieth century, that is of global relevance in terms of higher studies,	Attain knowledge and understand the principles and concepts in the respective discipline. Effectively	Remember the principles of Literature in general and English Literature in particular and	Recognise Modern Literature from a variety of cultures, languages and historic periods Explain the concepts

			research and employment	communicate general	understand its	of Enlightenment,
			r r s	and discipline-	typological, critical,	Revolution,
				specific information,	socio cultural aspects	Capitalism/Imperialis
				ideas and opinions.		m, Democracy and
				•		political history
						Use the spiritual,
						social and intellectual
						background of the age
						to interpret the works
						of various writers
						during the Modern
						Age
						Analyse various
						elements such as
						diction, tone, form,
						genre, imagery,
						figures of speech,
						symbolisms
B.A.English	UEENC20	Elective II A:	the course aims to	Emulate positive	Remember the	Identify the
		Women's	sensitize students on	social values and	principles of	positioning, stature &
		Writing	gender equality by	exercise leadership	Literature in general	development of
			familiarizing them with	qualities and team	and English	women in the society
			literary texts written by	work.	Literature in	through ages via the
			women that address the		particular and	Literary texts
			subordination,		understand its	Appreciate works by
			discrimination and		typological, critical,	women for the theme,
			objectification of women,		socio cultural aspects	style and form.

			across the globe and the			Examine the form
			Indian subcontinent			and content of the
						male – defined
						concepts and women -
						oriented concepts
						Evaluate the works by
						women for its political
						and social relevance
B.A.English	UEENE20	Elective II A:	students are introduced to	Attain knowledge	Remember the	Identify the
		New Literature	Literature in English as	and understand the	principles of	relationship between
		in English	firsthand literary	principles and	Literature in general	Great Britain and
			productions or in	concepts in the	and English	Nations that were
			translation, from countries	respective discipline.	Literature in	once colonized.
			where English is spoken	Effectively	particular and	Describe modes of
			as a second language/link	communicate general	understand its	writing and reading
			language	and discipline-	typological, critical,	that interrogate
				specific information,	socio cultural aspects	histories and the
				ideas and opinions.		presence of colonial
						mentalities and ways
						of life in a variety of
						postcolonial locations.
						Discuss the problems
						of race, class, history
						and identity presented
						in the Postcolonial
						texts.
						Analyze the problems

B. A. History	UATMA20, UATMB20	Tourism-I/II	To enable the students to understand the role and importance of transport and communication in the tourism sector	Attain knowledge and understand the principles and concepts in the respective discipline	Develop an understanding of the past life of the people, their culture, their religion, and the social system to transform into responsible and honest citizens	of identity, subjugation and cultural identification Appraise the complex maze of theoretical terms and concepts that characterize Postcolonial studies and savor the wonderful variety and richness of Literature. Describe the evolution of travel and tourism in the historical context.
B.A. History	UEHIA20	History of Asia from 1900 A.D to 2000 A.D	To help the students to comprehend the Political History of Asian countries and their formation	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	Examine the Independence of Indonesia and the Formation of new countries like Vietnam, Laos and Cambodia

					Society and become the Agents of social change.	
B.A. History	UAMGA20 UAMGB20	Modern Governments	To help the students to understand the basic concepts of the Constitution	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.	Describe the basic concepts of the Constitution
B.A. History	UCHIH20	History of Europe from 1789 A.D to 1945 A.D	To help the students to know the various events occurred in the history of Europe from 1789 to 1945 A.D	Effectively communicate general and discipline-specific information, ideas and options	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	Analyze the results of the French revolution and evaluate its impact in Present day political system and various reforms introduced by Napoleon Bonaparte to become an effective leader

B.A. History	UCHII20	History of	To help the students to	Effectively	Acquire the social	Compare the Early
		Ancient	understand the World	communicate general	values that indwell in	Civilizations with
		civilization	Civilization and its	and discipline-	History to become	Modern Civilization
			contribution to the World	specific information,	the leaders of politics	and to become the
				ideas and options	and commit to work	Agents of the Social
					for social justice,	Change and
					peace, and	communicate the
					sustainable	ideas and principles of
					development	Hebrew, Persian
						civilization
B.A. History	UCHIK20	History of Japan	To help the students to	Emulate positive	Develop an	Analyze the
		up to 1990 A.D	know the Early History of	social values and	understanding of the	Emergence of Japan
			Japan	exercise leadership	past life of the	as the World Powers
				qualities and	people, their culture,	and became the agents
				teamwork	their religion, and the	of Social Change
					social system to	
					transform into	
					responsible and	
					honest citizens	
B.A. History	UCHIL20	History of	To enable the students to	Pursue higher	Prepare for various	Appraise the role
		United States of	understand the causes for	knowledge, qualify	types of Competitive	played by Abraham
		America from	the discovery of America	professionally,	Examinations and	Lincoln in Civil war
		1776 to 1965	and its development	enhance	acquire human	to create respect for
		A.D	through the ages	entrepreneurial skills	values like equality,	equality, freedom and
				and contribute	freedom, and Social	respect for diversity
				towards the needs of	Justice and	and exercise
				the society.	contribute towards	leadership and Team

					the needs of the society	Spirit
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.	Mold the students to face the challenges in the global business	To attain the ability to be self - directed towards their career	To know about the environment and its impact on business

			Recognize the importance	environment and the	and contribute to the	To recognize the
			of business ethics and	society.	society	importance of
			social responsibility in		as responsible	business ethics and
			today's business		citizens.	social responsibility as
						an individual to the
						society
B.B.A	UCBAE20	Marketing	Course comprehend the	Mold the students to	Acquire the basic	Learn the recent
		Management	principles, concepts and	face the challenges in	and managerial	trends in marketing
			functions of marketing	the global business	communications	
			and to design a marketing	environment and the	skills to gain	
			strategies for a dynamic	society.	professionalism.	
			marketing and attain the			
			knowledge of Marketing			
			Mix			
B.B.A	UCBAF20	Financial	Course highlights the	Prepare the students	Acquire the ability	Give them a basic
		Accounting	fundamentals of	to be persistent	to be a future leader,	knowledge of
			accounting.	enough to pull out	manager and an	Accounting principles
				their own ideas and	entrepreneur	and practices
				opinions and	reflecting	
				to become a strong	ethical and social	
				pillar to the family	values.	
				and society		
				highlighting their		
				feminine power.		

B.B.A	UAEBA20	Economics for	Course understand the	Attain knowledge	To attain knowledge	Have depth
		Business	economic concepts and	and understand the	and understand the	knowledge in the
			techniques in evaluating	principles and	managerial principles	basics of Managerial
			business decisions	concepts in the	and concepts of the	Economics
				respective discipline.	course adopted.	
B.B.A	UEBAA20	International	To familiarize the students	Mold the students to	To acquire the	Familiarize in various
		Business	to the basic concepts of	face the challenges in	ability to be a future	International
			Globalization, Domestic	the global business	leader, manager and	Economic Institutions
			and International Trade	environment and the	an entrepreneur	and social
				society	reflecting ethical and	responsibility and
					social values.	ethical issues in
						international business
B.B.A	UEBAB20	Logistics and	To familiarize the students	To be stimulated	To acquire the	Be enriched about the
		Supply Chain	with the basic concepts of	towards the change	ability to be a future	activities involved in
		Management	logistics and supply chain	and to be conscious	leader, manager and	distribution network
			management	for sustainable	an entrepreneur	planning and
				development of the	reflecting ethical and	Integrated Supply
				society	social values.	Chain Management
B.B.A	UCBAH20	Cost and	To enable the students	Prepare the students	Acquire the ability	Gain knowledge on
		Management	understand the concept of	to be persistent	to be a future leader,	the concepts of
		Accounting	Management and Cost	enough to pull out	manager and an	management and cost
			Accounting	their own ideas and	entrepreneur	accounting techniques
				opinions and to	reflecting	
				become a strong	ethical and social	
				pillar to the family an	values.	
				society highlighting		
				their feminine power.		

B.B.A	UCBAJ20	Research	To understand the basic	To formulate, to	To get an exposure	Know the general
		Methodology	concepts of research	apply the theoretical	by applying the	definition of research
				knowledge into	theoretical	and qualities of
				practice by carrying	knowledge into	research.
				the institutional	practice by carrying	. Be able to write
				training and projects,	out the institutional	report and do
				to adopted sense of	training and projects	statistical analysis
				creative thinking and	in the organizations	
				learn problem solving		
				skills to take up		
				challenges faced in		
				today's modern		
				world.		
B.B.A	UCBAK20	Human	Course designed to	Mold the students to	To acquire the ability	Attain the knowledge
		Resource	understand the various HR	face the challenges in	to be a future leader,	of the various HR
		Management	functions like	the global business	manager and an	functions and its
		and	Recruitment, selection,	environment and the	entrepreneur	importance
		Development	training process and also	society.	reflecting ethical and	
			about performance		social values.	
			appraisal.			
B.B.A	UCBAL20	Financial	Course enable the learners	Mold the students to	To acquire the	Be well-versed in the
		Management	to understand concept of	face the challenges in	ability to be a future	financial decision,
			financial management,	the global business	leader, manager and	functions and
			scope, objectives and time	environment and the	an entrepreneur	organization of
			value of money.	society.	reflecting ethical and	financial
					social values.	managements

B.B.A	UEBAC20	Total Quality	Course is designed to	To communicate the	To attain the ability	Evaluate the
		Management	make the students	general ideas,	to be self - directed	principles of quality
			understand the concepts of	opportunities and	towards their career	management and to
			total quality management	opinions and to	and contribute to the	explain how these
				become empowered	society as	principles can be
				and motivated	responsible citizens.	applied within quality
				citizens of the		management systems
				country.		
B.B.A	UGBAA520	Human	The course is designed to	To bring up the	To attain the ability	Integrate the
		Resource	understand the basic	economically	to be self - directed	knowledge of HR
		Management	concepts of HRM	challenged, socially	towards their career	concepts
				backward young	and contribute to the	
				women to be	society as	
				competent with	responsible citizens.	
				today's expectation		
				of the competitive		
				world for their		
				sustenance		
B.B.A	USBAE520	Campus to	Course is designed to	Mold the students to	To acquire the basic	Proactively manage
		Corporate	build confidence, develop	face the challenges in	and managerial	the transition from
			self-esteem, and to bring	the global business	communications	being the student to
			positive changes in the	environment and the	skills to gain	the employee
			attitude & behavior of the	society.	professionalism.	
			students			

B.B.A	USBAB120	Winning	Course is designed to	Adapt towards the	Acquire the basic	To understand the role
		Through	understand the concept in	positive thinking	and managerial	of communication in
		Communication	communication	capacity, to adapt the	communications	Personal and
				social values, to	skills to gain	Professional success
				exercise leadership	professionalism.	
				qualities and bringing		
				out their capabilities		
				through team work		
B.B.A	USBAD320/	Hotel Planning	Course is designed to	To formulate, to	Acquire the basic	Understand the
	USBAD420	and	develop a conceptual	apply the theoretical	and managerial	concepts in Hotel
		Administration	understanding of the Hotel	knowledge into	communications	Planning and
			Planning and	practice by carrying	skills to gain	Administration
			Administration	the institutional	professionalism.	
				training and projects,		
				to adopted sense of		
				creative thinking and		
				learn problem solving		
				skills to take up		
				challenges faced in		
				today's modern		
				world.		
B.B.A	USBAC320/	Hospital	Course enable the students	To formulate, to	Acquire the basic	Be familiarized with
	/USBAC420	Planning and	to understand the planning	apply the theoretical	and managerial	Organization Structure
		Administration	of Modern Hospital	knowledge into	communications	and Medical Records
				practice by carrying	skills to gain	of a Hospital
				the institutional	professionalism.	
				training and projects,		

				to adopted sense of		
				creative thinking and		
				learn problem solving		
				skills to take up		
				challenges faced in		
				today's modern		
				world.		
B.C.A	UCCAA20	Programming in	To learning the basic	Acquire and apply	Acquire skills in	Introduce the students
		C	programming constructs	analytical, critical	computer and	to understand the
			they can easily switch	and creative thinking,	information	concept of basic
			over to any other language	and problem-solving	technology and also	programming- thereby
			in future.	skills	be competent in the	reducing the design
					field of Commerce,	complexity and
					Mathematics and	increasing the
					Management.	reusability of a
					_	component.
						Construct the basic
						structure of C-
						programming,
						declaration and usage
						of variable.
						Understand and
						develop conditional
						and iterative
						statements to write
						programs. Exercise C
						programs that uses

						array and string. Develop user defined functions to solve real time problems
B.C.A	UCCAB20	Fundamentals of Information Technology	The main objective is to introduce Information Technology in a Simple Language to all undergraduate students regardless of their specialization.	Attain knowledge and understand the principles and concepts in the respective discipline.	Equip the students with requisite knowledge, skills and right attitude necessary to provide effective software development skills in a global environment and also focus on preparing students for roles pertaining to computer applications and IT industry.	Understand the fundamental concepts of computers with the present level of knowledge of the students. Identify the basic terminology used in computer programming Understand the basic taxonomy and terminology of the data communication networking. Acquire the knowledge of Internet and its applications Analyze the difference between an operating system and an application program.

B.C.A	UCCAC20	Practical-I: C	To design, develop and	Pursue higher	Ability to work as a	Exercise with basic
			test programs written in C.	knowledge, qualify	member or leader in	structure of the C
				professionally,	diverse teams in	program, declaration
				enhance	multidisciplinary	and usage of variable.
				entrepreneurial skills	environment. And	Resolve mathematical
				and contribute	identify	and scientific
				towards the needs of	opportunities,	problem. Develop the
				the society.	entrepreneurship	programs using
					vision and use of	conditional and
					innovative ideas to	iterative statements.
					create value and	Implement array and
					wealth for the	string concept in C
					betterment of the	program Write real
					individual and	time problems using
					society.	user defined functions
B.C.A	UCCAD20	Python	To apply a solution	Acquire and apply	Become proficient	Understand the
			clearly and accurately in a	analytical, critical	and ensure job in the	Numbers, Math
			program using Python	and creative thinking,	key areas of	functions, Strings,
				and problem-solving	computer science	List, Tuples and
				skills	like Web designing	Dictionaries in Python
					and development,	Express different
					Mobile applications,	Decision-Making
					Network and	statements and
					communication	Functions. Interpret
					technologies,	Object oriented
					undertaking	programming in
					government	Python. Explain how

					organizations, faculty for computer science and applications in educating institutions.	to design GUI Applications in Python and evaluate different database operations Design and develop Client Server network applications using python
B.C.A	UCCAE20	Computer Organization and Architecture	To make students understand the basic structure and operation of digital computer. Also understand the hardware-software interface.	Effectively communicate general and discipline-specific information, ideas and opinions.	Equip the students with requisite knowledge, skills and right attitude necessary to provide effective software development skills in a global environment and also focus on preparing students for roles pertaining to computer applications and IT industry.	Explain the organization of basic computer, its design and the design of control Unit. Elaborate advanced concepts of computer architecture, Parallel Processing, Interprocessor communication and synchronization. .Demonstrate the working of central processing unit and RISC and CISC Architecture. Describe the

						operations and language the register transfer, micro operations and inputoutput organizationUnderstand the organization of memory and memory management hardware.
B.C.A	UCCAF20	Practical-II: Python	To describe the core syntax and semantics of Python programming	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Ability to work as a member or leader in diverse teams in multidisciplinary environment. And identify opportunities, entrepreneurship vision and use of innovative ideas to create value and wealth for the betterment of the individual and society.	To Understand the Numbers, Math functions, Strings, List, Tuples and Dictionaries in Python Express different Decision-Making statements and Functions. Interpret Object oriented programming in Python. Explain how to design GUI Applications in Python and evaluate different database operations.

						Design and develop Client Server network applications using python.
B.C.A	UCCAG20	Data Structures	To understanding about writing algorithms and step by step approach in solving problems with the help of fundamental data structures	Effectively communicate general and discipline-specific information, ideas and opinions.	Equip the students with requisite knowledge, skills and right attitude necessary to provide effective software development skills in a global environment and also focus on preparing students for roles pertaining to computer applications and IT industry.	Discuss the concept of complexity of algorithms, data types, algorithms, Big O notation. Apply basic data structures such as arrays, linked lists, stacks and queues. Identify problem involving trees and binary search trees. Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data using linked list. Analyze graphs and describe the hash function and concepts of collision and its resolution methods.

B.C.A	UCCAH20	Java	This course provides an	Acquire and apply	Equip the students	Able to understand the
		Programming	introduction to object	analytical, critical	with requisite	use of OOPs concepts.
			oriented programming	and creative thinking,	knowledge, skills	Able to solve real
			(OOP) using	and problem-solving	and right attitude	world problems using
			the Java programming	skills	necessary to	OOP techniques.
			language.		provide effective	To understand the use
					software	of polymorphism and
					development skills in	Inheritance
					a global environment	Able to understand the
					and also focus on	use of Packages and
					preparing students	Interface in java.
					for roles pertaining	Able to develop and
					to computer	understand exception
					applications and IT	handling,
					industry.	multithreaded
						applications with
						synchronization
						Able to design GUI
						based applications and
						develop AWT and
						applets for web
						applications.
B.C.A	UCCAI20	Design and	To demonstrate a	Emulate positive	Acquire skills in	Define the basic
		Analysis of	familiarity with major	social values and	computer and	concepts of algorithms
		Algorithms	algorithms and data	exercise leadership	information	and analyze the
			structures.	qualities and team	technology and also	performance of
				work.	be competent in the	algorithms.

					field of Commerce,	Discuss various
					Mathematics and	algorithm design
					Management.	techniques for
						developing
						algorithms.
						Identify the usage of
						set of rules design
						methods including the
						greedy approach,
						divide and overcome,
						dynamic
						programming, and
						certain. Understand
						the variations among
						backtracking, graph
						coloring and 8 Queens
						problems
						Understand NP
						completeness and
						identify different NP
						complete problems
B.C.A	UCCAJ20	Practical-III:	To understand object	Pursue higher	Introduce and update	Understand the
		Java	oriented programming	knowledge, qualify	knowledge relevant	fundamentals of
			concepts, and apply them	professionally,	to IT like	object-oriented
			in solving problems.	enhance	networking,	programming in Java,
				entrepreneurial skills	computer graphics,	including defining
				and contribute	web development,	classes, objects,

	towards the needs of	trouble shooting, and	invoking methods etc.
	the society.	hardware and	and I/O Streams.
		software skills. Also,	Establish exception
		to develop software	handling is used to
		solutions to problems	minimize the errors in
		across a broad range	Java programming
		of application	Demonstrate the
		domains through	concepts of Packages
		analysis and design.	and Interface.
			Evaluate the Java
			programs to
			implement error
			handling techniques
			using exception
			handling Design
			GUI based
			applications and
			develop applets for
			web applications.

B.C.A	UCCAK20	Practical-IV:	Apply important	Acquire and apply	Equip the students	Implement PUSH,
		Data Structures	algorithmic design	analytical, critical	with requisite	POP and Add and
		and Algorithms	paradigms and methods of	and creative thinking,	knowledge, skills	delete operations of
			analysis.	and problem-solving	and right attitude	Stack using Arrays.
				skills	necessary to provide	Explore the Infix to
					effective software	postfix conversion and
					development skills in	binary tree traversals
					a global environment	and its algorithms like
					and also focus on	depth first and breadth
					preparing students	first traversal
					for roles pertaining	Understanding
					to computer	polynomial addition
					applications and IT	and merge sort using
					industry.	Divide and Conquer
						Technique. Implement
						travelling Salesman
						problem using
						Dynamic
						programming and
						Hashing with two
						collision techniques
						Implement PUSH,
						POP and Add and
						delete operations of
						Stack using Arrays.

B.C.A	USCSA320	SBE:	To develop computer	Effectively	Acquire skills in	Understand the basics
		Accounting	skills of recording	communicate general	computer and	in Tally and company
		Software	financial transactions,	and discipline-	information	creation. Creating
			preparation of annual	specific information,	technology and also	vouchers, ledgers
			accounts and reports	ideas and opinions.	be competent in the	accounts, Balance
			using Tally.		field of Commerce,	Sheet.
					Mathematics and	Demonstrate Profit
					Management.	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.C.A	UCCAL20	Data	To introduce analysis and	Emulate positive	Become proficient	Describe the
		Communication	design of computer and	social values and	and ensure job in the	Functions of each
		s and	communication networks.	exercise leadership	key areas of	layer in OSI and
		Networking	Understand the network	qualities and team	computer science	TCP/IP Model.
			layered architecture and	work.	like Web designing	Explain the types of
			the protocol stack.		and development,	Transmission Media
					Mobile applications,	with Real-Time

D.C.A.	HIGGAMOO				Network and communication technologies, undertaking government organizations, faculty for computer science and applications in educating institutions.	Applications Apply Time and Frequency concept of analysis. Manage Network functions for an Organization Analyze various Routing Algorithms and Protocols.
B.C.A	UCCAM20	Operating System	To analyze: processes, resource control (concurrency etc.), physical and virtual memory, scheduling, I/O.	Attain knowledge and understand the principles and concepts in the respective discipline.	Introduce and update knowledge relevant to IT like networking, computer graphics, web development, trouble shooting, and hardware and software skills. Also to develop software solutions to problems across a broad range of application domains through analysis and design.	Acquire the important computer system resources and the role of operating system in their management policies and algorithms. Understand the process management policies and scheduling of processes by CPU. Evaluate the requirement for process synchronization and coordination handled

B.C.A	UCCAN20	.NET Programming	Design and develop professional Console and Window based .NET application.	Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Introduce and update knowledge relevant to IT like networking, computer graphics, web development, trouble shooting, and hardware and software skills. Also, to develop software solutions to problems across a broad range of application	by operating system. Describe and analyze the memory management and its allocation policies. Entity use and evaluate the storage management policies with respect to different storage management technologies. Understand the concepts of .NET Framework and C#. Apply the usage of Methods, Arrays and Strings. Interpret the concepts of Constructors, Inheritance and Interfaces. Analyze Operator Overloading, Delegates, Events and Exceptions.
						-
					analysis and design.	Applications and Web

						- based Applications.
B.C.A	UCCA020	Practical V:	To learn programmatically	Pursue higher	Equip the students	Become familiar with
		Linux	to implement simple OS	knowledge, qualify	with requisite	the C language,
			mechanisms.	professionally,	knowledge, skills	compiler, and make
				enhance	and right attitude	files to understand the
				entrepreneurial skills	necessary to provide	high-level structure of
				and contribute	effective software	the Linux kernel.
				towards the needs of	development skills in	Understand the high-
				the society.	a global environment	level structure of the
					and also focus on	Linux kernel both in
					preparing students	concept and source
					for roles pertaining	code.
					to computer	Acquire a detailed
					applications and IT	understanding of one
						aspect (the scheduler)
						of the Linux kernel.
						To learn to develop
						software for Linux
						systems
						To obtain a foundation
						for an advanced
						course in operating
						systems.

B.C.A	UCCAP20	Practical VI:	Identify and resolve	Pursue higher	Become proficient	Understand code
		.NET	problems in C#.NET	knowledge, qualify	and ensure job in the	solutions and compile
			window based application.	professionally,	key areas of	C# projects within the
				enhance	computer science	.NET framework.
				entrepreneurial skills	like Web designing	Create user interactive
				and contribute	and development,	web pages using
				towards the needs of	Mobile applications,	.NET.
				the society.	Network and	To develop,
					communication	implement and
					technologies,	creating Applications
					undertaking	with C#.
					government	Debug, compile, and
					organizations, faculty	run a simple
					for computer science	application.
					and applications in	Create Mobile
					educating	Application using
					institutions.	.NET compact
						Framework
B.C.A	USCSB420	SBE: Design	Identify the categories of	Acquire and apply	Ability to analyze	Design, create and
		and Animation	Tools and Identify each	analytical, critical	social and	animate objects and
			tools corresponding	and creative thinking,	environmental	characters with
			keyboard shortcut.	and problem-solving	aspects with	naturalistic and
				skills	professional values,	expressive movements
					ethics and equity to	and poses.
					transform the	Design and create
					knowledge, skills	hand-drawn and/or
					and expertise to the	computer-generated

					community.	drawings using
					Community.	principles of art,
						design and
						composition.
						Select and use
						appropriate tools and
						technologies for the
						development of
						animation projects.
						Contribute to the
						planning,
						implementation and
						evaluation of
						animation projects
						Plan, develop and
						execute a series of
						effective and
						believable animation
						sequences.
B.C.A	UCCAQ20	Relational	The objective of this	Acquire and apply	Become proficient	Demonstrate an
		Database	course is to expose the	analytical, critical	and ensure job in the	understanding of the
		Management	students to the	and creative thinking,	key areas of	elementary &
		Systems	fundamentals & basic	and problem-solving	computer science	advanced features of
			concepts in relational Data	skills	like Web designing	DBMS & RDBMS.
			Base Management		and development,	Write the SQL
			Systems.		Mobile applications,	commands to create
					Network and	tables and Triggers,

					communication technologies,	insert/update/delete data, and query data in
					undertaking government	a relational DBMS Analyze and Design a
					~	database based on a
					organizations, faculty	
					for computer science	data model
					and applications in	considering the
					educating	normalization to a
					institutions.	specified level.
						Apply the storage size
						of the database and
						design appropriate
						storage techniques
						Analyze the
						requirements of
						transaction
						processing,
						concurrency control
						Analyze and XML
						Structure
B.C.A	UCCAR20	Software	To develop, maintain	Emulate positive	Introduce and	Apply the software
		Engineering	efficient, reliable and cost	social values and	update knowledge	engineering lifecycle
			effective software	exercise leadership	relevant to IT like	by demonstrating
			solutions.	qualities and team	networking,	competence in
				work.	computer graphics,	communication,
					web development,	planning, analysis,
					trouble shooting, and	design, construction,

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			hardware and	and deployment.
			software skills. Also	Discuss the function
			to develop software	effectively on a team
			solutions to problems	whose members
			across a broad range	together provide
			of application	leadership, create a
			domains through	collaborative and
			analysis and design.	inclusive
			_	environment, establish
				goals, plan tasks, and
				meet objectives.
				Manage the time,
				processes and
				resources effectively
				by prioritizing
				competing demands to
				achieve personal and
				team goals Identify
				and analyzes the
				common threats in
				each domain.
				Understand
				architectural design in
				order to minimize the
				risks and errors Test
				the techniques for
				ensuring high quality
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						software and Understand the capabilities of cost
B.C.A	LICCA S20	Mobile	To learn about how to	A caving and apply	Dagama mediciant	estimation.
b.C.A	UCCAS20			Acquire and apply analytical, critical	Become proficient and ensure job in the	Understanding of Android and Android
		Application	develop an android			SDK and know about
		Development	services and to publish	and creative thinking,	key areas of computer science	its development
			android application for	and problem-solving skills	like Web designing	environment.
			use.	SKIIIS	and development,	Recognize the
					Mobile applications,	architecture of
					Network and	Android and its tools.
					communication	Analyze Eclipse and
					technologies,	Android Development
					undertaking	Tools (ADT).
					government	Understanding of the
					organizations, faculty	specific requirements,
					for computer science	possibilities and
					and applications in	challenges when
					educating	developing for a
					institutions.	mobile context
					motitutions.	Understanding of the
						interaction between
						user interface and
						underlying application
						infrastructure. Define
						to plan and carry out a

B.C.A	UECAA20	Elective I A:	Analyze Transportation	Emulate positive	Ability to analyze	design work including developing a prototype that can be evaluated with a specified user group Develop practical skills and knowledge to construct software for a mobile application and the ability to reflect over possibilities and demands in collaborative software development. Identify the role of
	CECI II IZO	Resource Management Techniques	Model and Solve optimization problems using dual simplex method.	social values and exercise leadership qualities and team work.	social and environmental aspects with professional values, ethics and equity to transform the knowledge, skills and expertise to the community.	computer in Operational Research techniques. Apply linear programming to solve real-life applications Analyze Transportation Model and Solve optimization problems using dual simplex

						method. Describe Assignment Model and Travelling Salesman Problem, Sequencing problem. Use PERT and CPM for problems in project management
B.C.A	UECAB20	Elective- I B: Cloud Computing	Discuss the fundamental concepts in cloud computing technologies.	Attain knowledge and understand the principles and concepts in the respective discipline.	Ability to analyze social and environmental aspects with professional values, ethics and equity to transform the knowledge, skills and expertise to the community.	Understand the fundamental concepts in cloud computing technologies. Analyze and integrate the cloud enabling services Analyze the architecture and concept of different cloud models: IaaS, PaaS, SaaS. Understand and familiar with the deployment models Comprehend the Cloud Data Security concepts and how they are addressed with the security mechanisms.

B.C.A	UECAC20	Elective- I C:	Identify, Analyze the	Emulate positive	Become proficient	Analyze, design,
		Object Oriented	subsystems, various	social values and	and ensure job in the	document the
		Analysis and	components and	exercise leadership	key areas of	requirements through
		Design	collaborate them	qualities and team	computer science	use case driven
			interchangeably Model the	work.	like Web designing	approach. Identify,
			event driven state of		and development,	analyze, and model
			object and transform them		Mobile applications,	structural and
			into implementation		Network and	behavioral concepts of
			specific layouts.		communication	the system Develop,
					technologies,	explore the conceptual
					undertaking	model into various
					government	scenarios and
					organizations, faculty	applications. Apply
					for computer science	the concepts of
					and applications in	architectural design
					educating	for deploying the code
					institutions.	for software Apply
						the Testing Strategies
						and Debugging
						Principles for
						measuring the User
						Satisfaction.
B.C.A	UCCAT20	Practical VII:	To apply relational	Pursue higher	Introduce and	Understand,
		RDBMS	database theory and be	knowledge, qualify	update knowledge	Appreciate and
			able to describe relational	professionally,	relevant to IT like	effectively explain the
			algebra expression, tuple	enhance	networking,	underlying concepts
			and domain relation	entrepreneurial skills	computer graphics,	of Database

		expression from queries.	and contribute	web development,	technologies.
		expression from queries.	towards the needs of	trouble shooting, and	Programming PL/SQL
			the society.	hardware and	including stored
			the society.	software skills. Also	procedures, stored
					functions, cursors,
				to develop software	
				solutions to problems	packages.
				across a broad range	Design and implement
				of application	a database schema for
				domains through	a given problem-
				analysis and design.	domain.
					Construct a query
					using SQL DDL,
					DML, and DCL
					Commands.
					Prepare various
					database tables and
					joins them using SQL
					commands. Analyze
					various aggregate
					functions using SQL
					commands. Design
					and develop front end
					tool VB .NET to
					design forms, and
					select, insert, delete,
					update using Data
					Source Binding.
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B.C.A	UCCAU20	Practical VIII:	To understand how to	Acquire and apply	Become proficient	Establishing the
		Mobile	work with various mobile	analytical, critical	and ensure job in the	development
		Application	application development	and creative thinking,	key areas of	environment.
		Development	frameworks.	and problem-solving	computer science	Implementing the
				skills	like Web designing	layout to add action
					and development,	bar.
					Mobile applications,	Understanding the
					Network and	interfaces using views,
					communication	menus and
					technologies,	notification. Apply
					undertaking	and learn multiple
					government	screens to emulate
					organizations, faculty	android application
					for computer science	Perform basic
					and applications in	interaction with
					educating	application.
					institutions.	
B.C.A	USCSG520	Skill-Based	Understand the usage of R	Pursue higher	Ability to analyze	To use R for
		Elective V: R	programming interactive	knowledge, qualify	social and	analytical
		Programming	environment.	professionally,	environmental	programming.
				enhance	aspects with	Explain the use of
				entrepreneurial skills	professional values,	data structure and loop
				and contribute	ethics and equity to	functions.
				towards the needs of	transform the	Analyze data and
				the society.	knowledge, skills	generate reports based
					and expertise to the	on the data.
					community.	Apply various

						concepts to write programs in R. Implementing Strings in R
B.C.A	UCCAV20	Internet and Web Programming	Enhance the programming experience with the help of tools like editors and debuggers that makes JavaScript coding easier and more interactive.	Emulate positive social values and exercise leadership qualities and team work.	Introduce and update knowledge relevant to IT like networking, computer graphics, web development, trouble shooting, and hardware and software skills. Also to develop software solutions to problems across a broad range of application domains through analysis and design.	Acquire the basic concept of JavaScript. Use operators, variables, arrays, control structures, functions and objects in JavaScript. Create PHP programs that use various PHP library functions, and that manipulate files and directories. Design a responsive web site using HTML, PHP, MySQL and Apache Students will be able to build dynamic web pages using JavaScript (Client Side Programming) and apply their knowledge to create interactive

						websites.
B.C.A	UCCAW20	Data Mining	To analyze the data,	Attain knowledge	Ability to work as a	Understand Data
			identify the problems, and	and understand the	member or leader in	Warehouse
			choose the relevant	principles and	diverse teams in	fundamentals and
			models and algorithms to	concepts in the	multidisciplinary	Data Mining
			apply.	respective discipline.	environment. And	Principles.
					identify	Understand and
					opportunities,	implement classical
					entrepreneurship	algorithms in data
					vision and use of	mining and identify
					innovative ideas to	the application area of
					create value and	algorithms.
					wealth for the	Compare and evaluate
					betterment of the	different data mining
					individual and	techniques like,
					society	prediction, clustering
						and association rule
						mining.
						Describe complex
						data types with respect
						to spatial and web
						mining Analyze the
						temporal mining
						techniques to detect
						patterns in the e-
						world.

B.C.A	UECAD20	Elective II A:	To understand	Appreciate	Become proficient	Classify the
		Cryptography	Cryptography Theories,	biodiversity and	and ensure job in the	symmetric encryption
			Algorithms and Systems.	enhance eco-	key areas of	techniques. Illustrate
				consciousness for	computer science	various Public key
				sustainable	like Web designing	cryptographic
				development of the	and development,	techniques.
				society.	Mobile applications,	Evaluate the
					Network and	authentication and
					communication	hash algorithms.
					technologies,	Summarize the
					undertaking	intrusion detection
					government	and its solutions to
					organizations, faculty	overcome the attacks.
					for computer science	Basic concepts of
					and applications in	system level security.
					educating	
					institutions.	
B.C.A	UECAE20	Elective II B:	Understand three	Effectively	Become proficient	Understand the basic
		Computer	dimensional graphics and	communicate general	and ensure job in the	objectives and scope
		Graphics	their transformations and	and discipline-	key areas of	of computer graphics
			to become familiar with	specific information,	computer science	To acquire knowledge
			clipping techniques.	ideas and opinions.	like Web designing	on graphics hardware
					and development,	devices and software
					Mobile applications,	used.
					Network and	Implement various
					communication	algorithms to scan,
					technologies,	convert the basic

					undertaking	geometrical
					government	primitives,
					0	Transformations, Area
					organizations, faculty	ĺ ,
					for computer science	filling, clipping.
					and applications in	Understand the
					educating	concepts of and
					institutions.	techniques used in 2D
						and 3D computer
						graphics, including
						viewing
						transformations,
						hierarchical modeling,
						color, lighting and
						texture
						Understand the
						concepts of computer
						graphics, including
						viewing, projection,
						Perspective, modeling
						and transformation in
						two and three
						dimensions.
B.C.A	UECAF20	Elective III A:	Understand fundamentals	Pursue higher	Become proficient	Understand the basic
		Mobile	of wireless	knowledge, qualify	and ensure job in the	concepts of mobile
		Computing	communications. Analyze	professionally,	key areas of	computing.
		_	security, energy	enhance	computer science	Expand the network
			efficiency, mobility,	entrepreneurial skills	like Web designing	layer protocols and Ad

			scalability, and their	and contribute	and development,	Hoc networks.
			unique characteristics in	towards the needs of	Mobile applications,	Apply the basis of
			wireless networks.	the society.	Network and	transport and
					communication	application layer
					technologies,	protocols.
					undertaking	Develop knowledge
					government	about different mobile
					organizations, faculty	platforms and
					for computer science	application
					and applications in	development.
					educating	Analyze security,
					institutions.	energy efficiency,
						mobility, scalability,
						and their unique
						characteristics in
						wireless networks.
B.C.A	UECAG20	Elective III B:	Investigate applications of	Attain knowledge	Ability to work as a	Understanding
		Artificial	AI techniques in	and understand the	member or leader in	different types of AI
		Intelligence	intelligent agents, expert	principles and	diverse teams in	Agents and its
			systems, artificial neural	concepts in the	multidisciplinary	Environments.
			networks and other	respective discipline.	environment. And	Know Various AI
			machine learning models.		identify	Search Algorithms
					opportunities,	(uninformed,
					entrepreneurship	informed, heuristic
					vision and use of	search).
					innovative ideas to	Understand the
					create value and	fundamentals of

					wealth for the betterment of the individual and society.	Knowledge representation (logic based, frame based). Understand the different types of Learning. Ability to apply knowledge representation, reasoning, and machine learning
B.C.A	UCCAX20	Practical IX: Internet and Web Programming	Comprehend the usage of PHP and JavaScript in dynamic web development.	Pursue higher knowledge, qualify professionally, enhance entrepreneurial skills and contribute towards the needs of the society.	Become proficient and ensure job in the key areas of computer science like Web designing and development, Mobile applications, Network and communication technologies, undertaking government organizations, faculty for computer science and applications in	Know variable naming rules and JavaScript data types. Use operators, variables, arrays, control structures, functions and objects in JavaScript. Demonstrate objects and arrays usage Create PHP programs that use various PHP library functions, and that manipulate files and directories.

					educating	Validate user input
					institutions.	and create cookies in
						PHP
B.C.A	UCCAY20	Project Work	Students have to do	Emulate positive	Ability to work as a	An ability to
			project throughout the	social values and	member or leader in	understand the social
			semester in any	exercise leadership	diverse teams in	and ethical
			application to gain	qualities and team	multidisciplinary	implications of
			practical knowledge	work.	environment. And	working as a
					identify	professional in the
					opportunities,	field of computer
					entrepreneurship	science. An ability to
					vision and use of	use current tools and
					innovative ideas to	methodologies in
					create value and	computing practice.
					wealth for the	
					betterment of the	
					individual and	
					society.	
B.C.A	USCSG620	Skill-Based	To Understand the	Acquire and apply	Ability to analyze	Design effective data
		Elective VI:	different data format and	analytical, critical	social and	visualizations in order
		Data Analytics	its graphical	and creative thinking,	environmental	to provide new
		Using Data	representation	and problem-solving	aspects with	insights into a
		Visualization		skills	professional values,	research question or
		Tools			ethics and equity to	communicate
					transform the	information to the
					knowledge, skills	viewer. Find and
					and expertise to the	select appropriate data

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			community.	that can be used in
				order to create a
				visualization that
				answers a particular
				research question
				Understand how
				Cultures of Practice
				influence the way data
				may be collected,
				described, or
				formatted in order to
				align their own data
				management practices
				with those of their
				discipline. Find and
				save data to IU-
				supported research
				storage for both short-
				and long-term
				preservation in order
				to comply with data
				management
				mandates Properly
				document and
				organize data and
				visualizations in order
				to prepare them for
	1			1 1

						reuse.
B.C.A	UGCSA520/	NME: Statistical	To Understand how to	Pursue higher	Become proficient	Be familiar with basic
	UGCSA620	Package for	start SPSS, define a	knowledge, qualify	and ensure job in the	SPSS functions and its
		Social Science	variety of statistical	professionally,	key areas of	tools. These functions
			variables, enter basic data	enhance	computer science	and tools will enable
			into SPSS, carry out a	entrepreneurial skills	like Web designing	students to
			statistical analysis that can	and contribute	and development,	proficiently open and
			test hypotheses.	towards the needs of	Mobile applications,	create SPSS data files.
				the society.	Network and	Presenting data using
					communication	SPSS generated
					technologies,	graphs and summary
					undertaking	statistics: descriptive
					government	statistics.
					organizations, faculty	Conducting
					for computer science	independent and
					and applications in	paired samples t-tests
					educating	to compare two
					institutions.	groups.
						Conducting a one-
						way ANOVA to
						compare more than
						two groups where the
						test variable is
						collected on a
						continuous scale and
						the data in each group
						follows the normal

D.C.A.	HCCCP520/	NIME, WI.		Envelope as Alice	December 6 street	distribution: One-way ANOVA. Analyzing data when normality assumption for data does not hold, i.e., the data does not follow the normal distribution. The statistical methods to analyze such data are collectively known as Nonparametric methods or distribution free method: nonparametric tests.
B.C.A	UGCSB520/ UGCSB620	NME: Web Designing Using	To train the students in building quality websites.	Emulate positive social values and	Become proficient and ensure job in the	Create web pages using predesigned
		Dreamweaver	1	exercise leadership	key areas of	layouts Add text,
				qualities and team	computer science	images, and other
				work.	like Web designing	elements to your
					and development,	pages. Add text,
					Mobile applications,	images, and other
					Network and	elements to your
					communication	pages Create and use
					technologies,	HTML tables Use
					undertaking	CSS to apply styles to

B.Com	USCOA120 / USCOA220	Consumer Awareness	Learn ways and means in safeguarding the rights of consumers	Life Long Learning recognize the need for and have the ability to engage in lifelong learning process to cope up with the emerging trends in social, cultural, economic and technological changes	government organizations, faculty for computer science and applications in educating institutions. Addressing the needs of the nation cater to the needs of the society so as to contribute for the development of the nation	your pages and site, and also to create interactive features Add forms to your web pages Students gained conceptual knowledge on the social responsibilities of the consumers
B.Com	UCCOF20	Principles of Cost Accounting	To assist management in decision making.	Function effectively as an individual and as a member or leader in teams strengthening group dynamics to achieve the common goals of the organizations.	Succeed in obtaining employment appropriate to their interest in related fields and make a positive contribution in public practice, government, commerce and industry.	Understand the ideas of costing, retrieving the concept to prepare tenders & Quotations.

B.Com	UCCOG20	Law of Contract	theoretical knowledge on	Excel as a socially	develop in their	Gained thorough
		I	legality of contract.	committed individual	professional career	knowledge in
				having empathy for	through lifelong	the performance of a
				the needs of the	learning and excel as	contract.
				society through	the fellow associates	
				value-based	in the field of	
				education.	company	
					secretaryship,	
					chartered	
					accountancy and	
					business	
					administration.	
B.Com	UECOA20	Principles of	Learn the concept and	Excel as a socially	Apply ethical	To become versatile
		Management	understand	committed individual	principles in	in coordinating and
			the principles and	having empathy for	promoting values and	developing the skill of
			managerial skills.	the needs of the	attitudes	effective
				society through	and become	communication
				value-based	responsible towards	
				education.	the practice of	
					accounting norms.	
B.Com	UCCOK20	Marketing	Understand the various	Function effectively	Exercise leadership	To understand the
			methods of channels of	as an individual and	qualities and moral	dynamics of
			distribution and	as a member or	values through	marketing and to
			familiarize with latest	leader in teams	ethical ways with the	know about latest
			Technologies.	strengthening	concern for the	trends in marketing
				group dynamics to	society and the	
				achieve the common	environment with	

				goals of the organizations.	team spirit to adapt to change throughout their professional career.	
B.Com	UECOC520	Banking: Law and Practice	Gain in-depth knowledge in the modern technologies for making payments and other technological services	Excel as a socially committed individual having empathy for the needs of the society through value-based education.	Apply ethical principles in promoting values and attitudes and become responsible towards the practice of accounting norms.	To update the regulations and technological implementation in modern scenario.
B.Sc. Biochemistry	UCBCA20	Bioorganic Chemistry	To provide a clear note on the bioorganic compounds.	Emulate positive social values and exercise leadership qualities and team work.	Attain skills to tackle issues and apply knowledge to find solutions for the problem	Assess the structural features of genetic material.
B.Sc. Biochemistry	UCBCC20	Main Practical-I	To provide a wide practical knowledge on Qualitative and Quantitative Analysis.	Emulate positive social values and exercise leadership qualities and team work.	Attain skills to tackle issues and apply knowledge to find solutions for the problem	Apply the safety rules in the laboratory
B.Sc. Biochemistry	UCBCB20	Cell Biology	To provide a deep knowledge about cell – the basic unit of life.	Emulate positive social values and exercise leadership qualities and team work.	Attain skills to tackle issues and apply knowledge to find solutions for the problem	Identify the type of cell division processes and its significance

B.Sc.	UCBCD20	Biochemical	To study about the	Emulate positive	Attain skills to	Compare the
Biochemistry		techniques	principles and applications	social values and	tackle issues and	difference between
			of biochemical techniques.	exercise leadership	apply knowledge to	various methods of
				qualities and team	find solutions for the	chromatography
				work.	problem	
B.Sc.	UCBCE20	Physiology and	To understand the	Emulate positive	Attain skills to	Identify the nutrients
Biochemistry		Nutrition	homeostatic mechanism of	social values and	tackle issues and	in food and their
			each organ.	exercise leadership	apply knowledge to	functions in
				qualities and team	find solutions for the	maintaining health
				work.	problem	
B.Sc.	UCBCF20	Main Practical-	To inculcate practical skill	Emulate positive	Attain skills to	Explain the basic
Biochemistry		II	in biochemistry.	social values and	tackle issues and	principles involved in
				exercise leadership	apply knowledge to	isolation of bio
				qualities and team	find solutions for the	molecules from
				work.	problem	various source
B.Sc.	USBCBn20	Skill Based	To provide awareness	Emulate positive	Attain skills to	Understand the
Biochemistry		Elective: Health	about common health	social values and	tackle issues and	common health
		Care for Women	problems of women and	exercise leadership	apply knowledge to	problems of women
			how to overcome certain	qualities and team	find solutions for the	
			diseases	work.	problem	
B.Sc.	UCBCG20	Enzymes &	To impart knowledge	Emulate positive	Attain skills to	Describe the
Biochemistry		Intermediary	about the enzymes and the	social values and	tackle issues and	properties, hypothesis
		metabolism	metabolism of	exercise leadership	apply knowledge to	and IUB classification
			biomolecules and its	qualities and team	find solutions for the	of enzymes
			interrelationship.	work.	problem	

B.Sc.	UCBCH20	Endocrinology	Endocrinology describes	Emulate positive	Attain skills to	Analyze the clinical
Biochemistry			in detail the role of	social values and	tackle issues and	disorders of hormones
			endocrine glands, their	exercise leadership	apply knowledge to	
			secretion and its	qualities and team	find solutions for the	
			regulatory effect on	work.	problem	
			metabolic activities to			
			maintain homeostasis.			
B.Sc.	UEBCA20	Elective IA:	To help the students to	Emulate positive	Attain skills to	Compare the
Biochemistry		Immunology	understand the	social values and	tackle issues and	spectrum of
			components of Immune	exercise leadership	apply knowledge to	autoimmune diseases
			system	qualities and team	find solutions for the	
				work.	problem	
B.Sc.	UEBCB20	Elective IB:	To understand the basics	Emulate positive	Attain skills to	Compare and
Biochemistry		Environmental	in toxicological aspects	social values and	tackle issues and	interpret the results of
		Toxicology	that effect the	exercise leadership	apply knowledge to	occupational exposure
			environment.	qualities and team	find solutions for the	assessments within the
				work.	problem	context of safety
						assessments
B.Sc.	UCBCJ20	Main Practical-	The course is aimed to	Emulate positive	Attain skills to	Predict the
Biochemistry		III	enhance the practical skill	social values and	tackle issues and	biochemical
			of the student in handling	exercise leadership	apply knowledge to	laboratory analysis
			and estimating the	qualities and team	find solutions for the	
			components present in the	work.	problem	
			biological samples.			

B.Sc.	UCBCK20	Main Practical-	The course is aimed to	Emulate positive	Attain skills to	To obtain practical
Biochemistry		IV	enhance the practical skill	social values and	tackle issues and	skills in basic
			of the student in handling	exercise leadership	apply knowledge to	hematological
			and estimating the	qualities and team	find solutions for the	techniques.
			components present in the	work.	problem	
			biological samples.			
B.Sc.	USBCCn20	Skill Based	To understand the concept	Emulate positive	Attain skills to	Re-construct and
Biochemistry		Elective: III:	of entrepreneurship	social values and	tackle issues and	build a mindset
		Entrepreneurial		exercise leadership	apply knowledge to	focusing on unique
		Biochemistry		qualities and team	find solutions for the	approach to market
				work.	problem	opportunities
B.Sc.	UCBCI20	Molecular	To make a study on life	Emulate positive	Attain skills to	Analyze the blueprint
Biochemistry		Biology	and the information	social values and	tackle issues and	of life
			centers called genes.	exercise leadership	apply knowledge to	
				qualities and team	find solutions for the	
				work.	problem	
B.Sc.	UEBCC20	Elective IIA:	To understand the	Emulate positive	Attain skills to	Compare the
Biochemistry		Clinical	biochemical basis of	social values and	tackle issues and	application of
		Biochemistry	various diseases and	exercise leadership	apply knowledge to	diagnostic enzymes
			disorders	qualities and team	find solutions for the	
				work.	problem	
B.Sc.	UEBCD20	Elective IIB:	To make detailed study of	Emulate positive	Attain skills to	Compare the structure
Biochemistry		Pharmacology	drugs, and their actions on	social values and	tackle issues and	and uses of antibiotics
			living systems	exercise leadership	apply knowledge to	available
				qualities and team	find solutions for the	
				work.	problem	

B.Sc.	UEBCE20	Elective IIIA:	To explore the	Emulate positive	Attain skills to	Identify and debate
Biochemistry		Biotechnology	applications and future	social values and	tackle issues and	the ethical and social
			potential of Biotechnology	exercise leadership	apply knowledge to	issues in the field of
				qualities and team	find solutions for the	biotechnology and get
				work.	problem	insight in application
						of rDNA technology
B.Sc.	UEBCF20	Elective IIIB:	To explore the	Emulate positive	Attain skills to	Create the impact of
Biochemistry		Plant	applications of plant and	social values and	tackle issues and	nitrogen, Sulphur and
		Biochemistry	their products	exercise leadership	apply knowledge to	carbon cycle on nature
				qualities and team	find solutions for the	
				work.	problem	
B.Sc.	USBCDn20	Skill Based	To make detailed study of	Emulate positive	Attain skills to	Apply
Biochemistry		Elective: IV-	the organization and	social values and	tackle issues and	histopathological
		Medical	functions of a laboratory	exercise leadership	apply knowledge to	techniques in
		Laboratory		qualities and team	find solutions for the	detecting abnormal
		Technology		work.	problem	cells
B.Sc.	USBCAn20	Skill Based	To make a note on	Emulate positive	Attain skills to	Use a balanced diet
Biochemistry		Elective: II -	nutrients and its role on	social values and	tackle issues and	for diseased
		Nutritional	metabolism.	exercise leadership	apply knowledge to	conditions
		Biochemistry		qualities and team	find solutions for the	
				work.	problem	
B.Sc.	UABCA20	Allied	To acquire knowledge on	Emulate positive	Attain skills to	List out the structural
Biochemistry		Biochemistry - I	the structure and the	social values and	tackle issues and	components,
			function of biomolecules	exercise leadership	apply knowledge to	properties and
				qualities and team	find solutions for the	biological importance
				work.	problem	of nucleic acids.

B.Sc.	UABCB20	Allied	To understand the basic of	Emulate positive	Attain skills to	Gain knowledge of
Biochemistry		Biochemistry -	metabolic pathway	social values and	tackle issues and	intermediary
		II		exercise leadership	apply knowledge to	metabolism and
				qualities and team	find solutions for the	regulation of
				work.	problem	individual metabolism
B.Sc.	UABCC20	Allied	To acquire knowledge on	Emulate positive	Attain skills to	Understand the
Biochemistry		Biochemistry	the structure and the	social values and	tackle issues and	various identification
		Practical	function of biomolecules	exercise leadership	apply knowledge to	tests for carbohydrates
				qualities and team	find solutions for the	
				work.	problem	
B.Sc.	UGBCAn20	NME: Disease	To provide a basic	Emulate positive	Attain skills to	Acquire a broad
Biochemistry		and Treatment	knowledge about common	social values and	tackle issues and	knowledge about the
			diseases and its treatment.	exercise leadership	apply knowledge to	deadliest diseases in
				qualities and team	find solutions for the	the world
				work.	problem	
B.Sc.	UCBCBn20	NME:	To impart knowledge on	Emulate positive	Attain skills to	Acquire knowledge
Biochemistry		Therapeutic	action of drugs in treating	social values and	tackle issues and	on the medicinal
		Agents	diseases.	exercise leadership	apply knowledge to	therapy for various
				qualities and team	find solutions for the	health conditions and
				work.	problem	function of medicinal
						plants as therapeutics

B.Sc. Chemistry	UCCHA20	General	Our curriculum meets the	Attain knowledge	Demonstrate a firm	Recall and understand
		Chemistry – I	global requirements and	and understand the	foundation in	the concepts of
			enables students to pursue	principles and	fundamentals and	valency, oxidation and
			higher studies in	concepts in the	gain an in depth	reduction, classify the
			educational institutions	respective discipline.	knowledge in	elements in the
			abroad.		different fields of	periodic table and
					Chemistry such as	explain the periodicity
					Inorganic Chemistry,	of properties.
					Organic Chemistry,	Recall the concepts
					Physical Chemistry,	and theories of acid -
					Analytical	base, buffer solutions,
					Chemistry,	understand the
					Pharmaceutical	principle of inorganic
					Chemistry, Food	qualitative analysis
					Chemistry and Small	and apply it in
					Scale Chemistry.	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.
						Analyze and apply

B.Sc. Chemistry	UCCHC20	Practical - I: Inorganic Qualitative Analysis	Our curriculum meets the global requirements and enables students to pursue higher studies in	Attain knowledge and understand the principles and concepts in the	Demonstrate a firm foundation in fundamentals and gain an in depth	the concepts of liquid and gaseous states. Recall the concepts of classical and quantum mechanics and solve related problems. Recall the principles of inorganic qualitative analysis. Apply the concepts of
		Analysis	higher studies in educational institutions abroad.		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.	
						interfering radical. Eliminate the interfering acid radical for group separation

						and identification of basic radicals.
B.Sc. Chemistry	UCCHB20	General	Our curriculum meets the	Attain knowledge	Demonstrate a firm	Illustrate the different
		Chemistry – II	global requirements and	and understand the	foundation in	types of bonds with
			enables students to pursue	principles and	fundamentals and	examples and apply
			higher studies in	concepts in the	gain an in depth	the knowledge of
			educational institutions	respective discipline.	knowledge in	VSEPR theory to
			abroad.		different fields of	determine geometries
					Chemistry such as	of molecules.
					Inorganic Chemistry,	Interpret the
					Organic Chemistry,	molecular orbital
					Physical Chemistry,	theory of homo and
					Analytical	hetero nuclear
					Chemistry,	diatomic molecules,
					Pharmaceutical	compare the chemical
					Chemistry, Food	and physical
					Chemistry and Small	properties of alkali
					Scale Chemistry.	metals and their
						compounds and
						understand the
						chemistry of lithium.
						Analyse and apply
						the electronic
						displacement effects,
						reactions, generation,
						structure and stability
						of reaction

B.Sc. Chemistry	UCCHC20	Practical - I: Inorganic Qualitative Analysis	Our curriculum meets the global requirements and enables students to pursue higher studies in educational institutions abroad.	Attain knowledge and understand the principles and concepts in the respective discipline.	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	intermediates. Examine and analyze the reactions and mechanisms of alkanes, alkenes, dienes and alkynes. Analyze the laws and concepts of ideal and non-ideal solutions, mesomorphic and colloidal states. Recall the principles of inorganic qualitative analysis. Apply the concepts of semimicro analysis in inorganic qualitative analysis. Develop skill to analyze systematically the given inorganic mixture and identify the acid and basic radicals. Understand the importance of
					Chemistry and Small Scale Chemistry.	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 global requirements and enables students to pursue higher studies in educational institutions abroad.	Attain knowledge and understand the principles and concepts in the respective discipline.	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.	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 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,

B.Sc. Chemistry	UCCHF20	Practical – II: Volumetric Estimation	Our curriculum meets the global requirements and enables students to pursue higher studies in educational institutions abroad.	Attain knowledge and understand the principles and concepts in the respective discipline.	Demonstrate a firm foundation in fundamentals and gain an in depth knowledge in different fields of	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. Use double titration method in volumetric analysis. Prepare standard solutions. Apply volumetric
			abroad.		different fields of Chemistry such as	Apply volumetric principles to carry out
					Inorganic Chemistry,	acid-base titrations,
					Organic Chemistry,	complexometric
					Physical Chemistry,	titrations,
					Analytical	precipitation titration
					1	and redox titrations
					Chemistry,	and redux titrations

					Pharmaceutical	like
					Chemistry, Food	permanganometric,
					Chemistry and Small	dichrometry and
					Scale Chemistry.	iodometric
						titrations.
B.Sc. Chemistry	USCHA320	Skill Based	Our curriculum meets the	Attain knowledge	Demonstrate a firm	Discuss the
		Elective – III	global requirements and	and understand the	foundation in	composition,
		Industrial	enables students to pursue	principles and	fundamentals and	characteristics and
		Chemistry	higher studies in	concepts in the	gain an in depth	manufacture of
			educational institutions	respective discipline.	knowledge in	various industrial
			abroad.		different fields of	products. (Polymer,
					Chemistry such as	Leather, Textile,
					Inorganic Chemistry,	Glass, Ceramics,
					Organic Chemistry,	Cements, Paints and
					Physical Chemistry,	Pigments).
					Analytical	Explain the various
					Chemistry,	process involved in
					Pharmaceutical	the manufacture of
					Chemistry, Food	leathers and leather
					Chemistry and Small	products.
					Scale Chemistry.	Describe the
						importance of natural
						and synthetic fibers in
						textile industry.
						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	Our curriculum meets the	Attain knowledge	Demonstrate a firm	Explain the periodic
		Chemistry – IV	global requirements and	and understand the	foundation in	properties of Nitrogen,
			enables students to pursue	principles and	fundamentals and	Oxygen and Halogen
			higher studies in	concepts in the	gain an in depth	family elements and
			educational institutions	respective discipline.	knowledge in	their compounds,
			abroad.		different fields of	and reason out the
					Chemistry such as	position of noble
					Inorganic Chemistry,	gases in the periodic
					Organic Chemistry,	table and describe the
					Physical Chemistry,	preparation and
					Analytical	properties of xenon
					Chemistry,	compounds. Illustrate
					Pharmaceutical	the mechanisms of
					Chemistry, Food	aliphatic, aromatic
					Chemistry and Small	nucleophilic
					Scale Chemistry.	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:	Our curriculum meets the	Attain knowledge	Demonstrate a firm	Use double titration
		Volumetric	global requirements and	and understand the	foundation in	method in volumetric
		Estimation	enables students to pursue	principles and	fundamentals and	analysis.
			higher studies in	concepts in the	gain an in depth	Prepare standard
			educational institutions	respective discipline.	knowledge in	solutions.
			abroad.		different fields of	Apply volumetric
					Chemistry such as	principles to carry out
					Inorganic Chemistry,	acid-base titrations,

					Organic Chemistry, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small Scale Chemistry.	complexometric titrations, precipitation titration and redox titrations like permanganometric, micrometry and iodometric titrations.
B.Sc. Chemistry	USCHB420	Skill Based Elective – IV Agricultural chemistry	Our curriculum meets the global requirements and enables students to pursue higher studies in educational institutions abroad.	Attain knowledge and understand the principles and concepts in the respective discipline.	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.	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	Our curriculum meets the	Attain knowledge	Demonstrate a firm	Discuss the general
		Chemistry	global requirements and	and understand the	foundation in	characteristics of d
			enables students to pursue	principles and	fundamentals and	and f block elements,
			higher studies in	concepts in the	gain an in depth	and compare the
			educational institutions	respective discipline.	knowledge in	properties of elements
			abroad.		different fields of	belonging to Ti, V,
					Chemistry such as	Cr, Mn and Fe groups.
					Inorganic Chemistry,	Summarize the
					Organic Chemistry,	various steps involved
					Physical Chemistry,	in metallurgical
					Analytical	processes, and
					Chemistry,	illustrate the
					Pharmaceutical	preparation, properties
					Chemistry, Food	and uses of Ti, Zr, U,
					Chemistry and Small	Pt and Th.
					Scale Chemistry.	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

B.Sc. Chemistry	UCCHH20	Organic Chemistry	Our curriculum meets the global requirements and enables students to pursue higher studies in educational institutions abroad.	Attain knowledge and understand the principles and concepts in the respective discipline.	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.	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. 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
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B.Sc. Chemistry	UCCHI20	Physical Chemistry	Our curriculum meets the global requirements and enables students to pursue higher studies in educational institutions abroad.	Attain knowledge and understand the principles and concepts in the respective discipline.	Demonstrate a firm foundation in fundamentals and gain an in depth knowledge in different fields of	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. Demonstrate the plausible mechanisms based on the study of the kinetics of chemical reactions. Describe the theories
			higher studies in	concepts in the	gain an in depth	the kinetics of
			abroad.		Chemistry such as	developed to
					Inorganic Chemistry, Organic Chemistry,	understand the reaction kinetics of
					Physical Chemistry,	simple and complex
					Analytical	reactions.
					Chemistry,	Explain the basic
					Pharmaceutical	principles of photo

					Chemistry, Food	chemistry, deduce rate
						-
					Chemistry and Small	laws of photochemical
					Scale Chemistry.	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.
B.Sc. Chemistry	UECHA20	Elective - I A:	Our curriculum meets the	Attain knowledge	Demonstrate a firm	Summarize the
		Analytical	global requirements and	and understand the	foundation in	various steps involved
		Chemistry	enables students to pursue	principles and	fundamentals and	in gravimetric
			higher studies in	concepts in the	gain an in depth	analysis.
			educational institutions	respective discipline.	knowledge in	Demonstrate the
			abroad.		different fields of	principles and
					Chemistry such as	techniques involved in
					Inorganic Chemistry,	paper, column, TLC
					Organic Chemistry,	and ion exchange

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		Physical Chemistry,	chromatography and
		Analytical	their applications.
		Chemistry,	Explain the absorption
		Pharmaceutical	laws, instrumentation
		Chemistry, Food	and working of UV-
		Chemistry and Small	Visible
		Scale Chemistry.	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.

B.Sc. Chemistry	UECHB20	Elective - I B:	Our curriculum meets the	Attain knowledge	Demonstrate a firm	Define and relate
		Basics of	global requirements and	and understand the	foundation in	software and
		Computer	enables students to pursue	principles and	fundamentals and	hardware.
		Programming in	higher studies in	concepts in the	gain an in depth	Describe the various
		C and its	educational institutions	respective discipline.	knowledge in	components of C
		Applications in	abroad.		different fields of	language.
		Chemistry			Chemistry such as	Demonstrate the uses
					Inorganic Chemistry,	of functions, arrays
					Organic Chemistry,	and pointers.
					Physical Chemistry,	Apply C language for
					Analytical	solving problems in
					Chemistry,	chemistry.
					Pharmaceutical	Apply C language to
					Chemistry, Food	calculate specific
					Chemistry and Small	terms in Chemistry.
					Scale Chemistry.	
B.Sc. Chemistry	UCCHL20	Practical - III:	Our curriculum meets the	Attain knowledge	Demonstrate a firm	Demonstrate practical
		Physical	global requirements and	and understand the	foundation in	skills in carrying out
		Chemistry	enables students to pursue	principles and	fundamentals and	chemical reactions of
			higher studies in	concepts in the	gain an in depth	different orders to
			educational institutions	respective discipline.	knowledge in	arrive at reaction
			abroad.		different fields of	kinetics.
					Chemistry such as	Estimate
					Inorganic Chemistry,	quantitatively using
					Organic Chemistry,	conductometric and
					Physical Chemistry,	potentiometric
					Analytical	titrations

					Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small Scale Chemistry.	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
B.Sc. Chemistry	UCCHM20	Practical - IV: Gravimetric Estimation	Our curriculum meets the global requirements and enables students to pursue higher studies in educational institutions abroad.	Attain knowledge and understand the principles and concepts in the respective discipline.	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,	equipment's with technical skills Quantitatively estimate metal ions using gravimetric analysis. Gain knowledge on the choice of precipitating methods, reagents, crucibles and filtration. Identify common
					Analytical Chemistry, Pharmaceutical	errors in gravimetric analysis. Outline the favorable

B.Sc. Chemistry	UCCHN20	Practical - V:	Our curriculum meets the	Attain knowledge	Chemistry, Food Chemistry and Small Scale Chemistry. Demonstrate a firm	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. Apply the concepts of
		Organic Analysis and	global requirements and enables students to pursue	and understand the principles and	foundation in fundamentals and	micro scale analysis in organic qualitative
		Preparation	higher studies in	concepts in the	gain an in depth	analysis.
		_	educational institutions	respective discipline.	knowledge in	Develop skill to
			abroad.		different fields of	analyse systematically
					Chemistry such as	the given organic
					Inorganic Chemistry,	mixture and identify
					Organic Chemistry,	the functional group
					Physical Chemistry,	and special elements.
					Analytical	Prepare simple
					Chemistry,	organic compounds.
					Pharmaceutical	Discuss the
					Chemistry, Food	importance of
					Chemistry and Small	laboratory practices
					Scale Chemistry.	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	Our curriculum meets the	Attain knowledge	Demonstrate a firm	Understand the laws,
		Scale Chemistry	global requirements and	and understand the	foundation in	role and steps
			enables students to pursue	principles and	fundamentals and	involved in starting
			higher studies in	concepts in the	gain an in depth	small scale
			educational institutions	respective discipline.	knowledge in	industries.Acquire
			abroad.		different fields of	skills to prepare soaps
					Chemistry such as	and
					Inorganic Chemistry,	detergents.Describe
					Organic Chemistry,	the characteristics and
					Physical Chemistry,	uses of cosmetics and
					Analytical	perfumes.Gain skills
					Chemistry,	in the manufacture of
					Pharmaceutical	selected small-scale
					Chemistry, Food	products.
					Chemistry and Small	
					Scale Chemistry.	

B.Sc. Chemistry	UCCHJ20	Coordination	Our curriculum meets the	Attain knowledge	Demonstrate a firm	
-		Chemistry	global requirements and	and understand the	foundation in	Define the terms
			enables students to pursue	principles and	fundamentals and	involved in
			higher studies in	concepts in the	gain an in depth	coordination
			educational institutions	respective discipline.	knowledge in	chemistry and recall
			abroad.		different fields of	IUPAC nomenclature
					Chemistry such as	of coordination
					Inorganic Chemistry,	compounds and to
					Organic Chemistry,	explain the concept of
					Physical Chemistry,	chelation and illustrate
					Analytical	the isomerism
					Chemistry,	exhibited by
					Pharmaceutical	coordination
					Chemistry, Food	complexes.
					Chemistry and Small	Explain and compare
					Scale Chemistry.	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

B.Sc. Chemistry	UCCHK20	Electro Chemistry	Our curriculum meets the global requirements and enables students to pursue higher studies in educational institutions abroad.	Attain knowledge and understand the principles and concepts in the respective discipline.	Demonstrate a firm foundation in fundamentals and gain an in depth knowledge in different fields of Chemistry such as Inorganic Chemistry, Organic Chemistry,	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. Apply the laws on electrolysis and definitions of specific, equivalent and molar conductance to the working of electrolytic cells. Illustrate Debye Huckel's theory of etrong electrolytes
					Organic Chemistry, Physical Chemistry, Analytical Chemistry,	Huckel's theory of strong electrolytes. Explain the use of electrical energy in
					Pharmaceutical Chemistry, Food Chemistry and Small Scale Chemistry.	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:	Our curriculum meets the	Attain knowledge	Demonstrate a firm	Explain the structural
		Chemistry of	global requirements and	and understand the	foundation in	elucidation, properties
		Natural Products	enables students to pursue	principles and	fundamentals and	and reactions of
			higher studies in	concepts in the	gain an in depth	glucose, fructose,
			educational institutions	respective discipline.	knowledge in	sucrose, maltose,
			abroad.		different fields of	starch and cellulose.
					Chemistry such as	Elaborate the
					Inorganic Chemistry,	preparation, properties
					Organic Chemistry,	and reactions of alpha

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			Physical Chemistry,	amino acids, synthesis
			Analytical	of peptides and
			Chemistry,	classification and
			Pharmaceutical	structure of proteins.
			Chemistry, Food	Explain the structure
			Chemistry and Small	and applications
			Scale Chemistry.	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:	Our curriculum meets the	Attain knowledge	Demonstrate a firm	Classify polymers and
		Polymer	global requirements and	and understand the	foundation in	determine the
		Chemistry	enables students to pursue	principles and	fundamentals and	molecular weights of
			higher studies in	concepts in the	gain an in depth	polymers by physical
			educational institutions	respective discipline.	knowledge in	and chemical
			abroad.		different fields of	methods.
					Chemistry such as	Describe the
					Inorganic Chemistry,	mechanisms of
					Organic Chemistry,	different types of
					Physical Chemistry,	polymerization
					Analytical	reactions.
					Chemistry,	Summarize the types
					Pharmaceutical	and techniques
					Chemistry, Food	involved in polymer
					Chemistry and Small	degradation.
					Scale Chemistry.	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:	Our curriculum meets the	Attain knowledge	Demonstrate a firm	Describe the
		Applied	global requirements and	and understand the	foundation in	digestion and
		Chemistry	enables students to pursue	principles and	fundamentals and	absorption of
			higher studies in	concepts in the	gain an in depth	carbohydrates,
			educational institutions	respective discipline.	knowledge in	proteins and fats and
			abroad.		different fields of	describe the role of
					Chemistry such as	enzymes and
					Inorganic Chemistry,	physiological
					Organic Chemistry,	functions of
					Physical Chemistry,	hormones.
					Analytical	Recall the definition,
					Chemistry,	constituents and
					Pharmaceutical	physio-chemical
					Chemistry, Food	properties of milk and
					Chemistry and Small	indicate the
					Scale Chemistry.	composition of
						creams, butter, ghee
						and ice creams.
						Demonstrate the chief
						processes involved in
						leather manufacture
						and treatment of
						tannery effluents
						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:	Our curriculum meets the	Attain knowledge	Demonstrate a firm	Explain the basic
		Pharmaceutical	global requirements and	and understand the	foundation in	pharmacological terms
		Chemistry	enables students to pursue	principles and	fundamentals and	are used in
			higher studies in	concepts in the	gain an in depth	pharmaceutical
			educational institutions	respective discipline.	knowledge in	chemistry. Illustrate
			abroad.		different fields of	the selected Indian
					Chemistry such as	Medicinal plants and
					Inorganic Chemistry,	their uses.
					Organic Chemistry,	Elaborate the
					Physical Chemistry,	definition, properties
					Analytical	and therapeutic uses
					Chemistry,	of sulphonamides,
					Pharmaceutical	antibiotics, antiseptics
					Chemistry, Food	and disinfectants.
					Chemistry and Small	Explain the role of
					Scale Chemistry.	analgesics and
						anesthetics.
						Analyse the causes,
						symptoms and drugs
						used for the treatment
						of Cancer, AIDS,
						Epilepsy and

						Hypertension 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 global requirements and enables students to pursue higher studies in educational institutions abroad.	Attain knowledge and understand the principles and concepts in the respective discipline.	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.	Demonstrate practical skills in carrying out chemical reactions of different orders to arrive at reaction kinetics. Estimate quantitatively using conductometric and potentiometric titrations Assess the meaning of values and calculations in experiments and learn the techniques of getting rate constants through graphical methods.

B.Sc. Chemistry	UCCHM20	Practical - IV: Gravimetric Estimation	Our curriculum meets the global requirements and enables students to pursue higher studies in educational institutions abroad.	Attain knowledge and understand the principles and concepts in the respective discipline.	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, Physical Chemistry, Analytical Chemistry, Pharmaceutical Chemistry, Food Chemistry and Small Scale Chemistry.	Understand laboratory practices and safety/First aid rules. Handle electronic equipment's with technical skills 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.
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						used in gravimetric estimations.
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B.Sc. Chemistry	UCCHN20	Practical - V:	Our curriculum meets the	Attain knowledge	Demonstrate a firm	Apply the concepts of
		Micro Scale	global requirements and	and understand the	foundation in	micro scale analysis in
		Organic	enables students to pursue	principles and	fundamentals and	organic qualitative
		Analysis and	higher studies in	concepts in the	gain an in depth	analysis.
		Preparation	educational institutions	respective discipline.	knowledge in	Develop skill to
			abroad.		different fields of	analyse systematically
					Chemistry such as	the given organic
					Inorganic Chemistry,	mixture and identify
					Organic Chemistry,	the functional group
					Physical Chemistry,	and special elements.
					Analytical	Prepare simple
					Chemistry,	organic compounds.
					Pharmaceutical	Discuss the
					Chemistry, Food	importance of
					Chemistry and Small	laboratory practices
					Scale Chemistry.	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	Our curriculum meets the	Attain knowledge	Demonstrate a firm	Apply simple
		Chemistry	global requirements and	and understand the	foundation in	analytical techniques
			enables students to pursue	principles and	fundamentals and	for detecting food
			higher studies in	concepts in the	gain an in depth	adulterants.
			educational institutions	respective discipline.	knowledge in	Describe the role of
			abroad.		different fields of	food additives,
					Chemistry such as	preservatives, flavors,
					Inorganic Chemistry,	colors and
					Organic Chemistry,	antioxidants.
					Physical Chemistry,	Detect food poisons
					Analytical	and apply first aid
					Chemistry,	techniques.
					Pharmaceutical	Distinguish between
					Chemistry, Food	alcoholic and
					Chemistry and Small	nonalcoholic
					Scale Chemistry.	beverages.
						Describe the
						importance of
						saturated and
						unsaturated fats in
						edible oils and the
						nutritive value of
						fruits and vegetables.
B.Sc. Chemistry	UGCHA520	Food and	Our curriculum meets the	Attain knowledge	Demonstrate a firm	Explain the sources,
	/620	Nutrition	global requirements and	and understand the	foundation in	classification,
		Chemistry	enables students to pursue	principles and	fundamentals and	functions, deficiency
			higher studies in	concepts in the	gain an in depth	diseases and

			educational institutions	respective discipline.	knowledge in	metabolism of
			abroad.		different fields of	carbohydrates.Explain
					Chemistry such as	the sources,
					Inorganic Chemistry,	classification,
					Organic Chemistry,	functions, deficiency
					Physical Chemistry,	diseases and
					Analytical	metabolism of
					Chemistry,	proteins and
					Pharmaceutical	fats.Outline the
					Chemistry, Food	sources, functions and
					Chemistry and Small	deficiency diseases of
					Scale Chemistry.	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	Cosmetics and	Our curriculum meets the	Attain knowledge	Demonstrate a firm	Define and classify

/620	Dyes	global requirements and	and understand the	foundation in	cosmetics, deodorants,
		enables students to pursue	principles and	fundamentals and	antiperspirants,
		higher studies in	concepts in the	gain an in depth	perfumes, aerosols
		educational institutions	respective discipline.	knowledge in	and identify the pros
		abroad.		different fields of	and cons of synthetic
				Chemistry such as	cosmetics.
				Inorganic Chemistry,	Describe the safety
				Organic Chemistry,	assessment methods
				Physical Chemistry,	used by FDA.
				Analytical	Prepare and use fruits
				Chemistry,	and vegetables based
				Pharmaceutical	herbal cosmetics and
				Chemistry, Food	evaluate the
				Chemistry and Small	significance of
				Scale Chemistry.	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	Our curriculum meets the	Attain knowledge	Demonstrate a firm	Understand and apply
		Chemistry I	global requirements and	and understand the	foundation in	the concept of
			enables students to pursue	principles and	fundamentals and	aromaticity,
			higher studies in	concepts in the	gain an in depth	mechanism of
			educational institutions	respective discipline.	knowledge in	electrophilic
			abroad.		different fields of	substitution reaction,
					Chemistry such as	and chemistry of
					Inorganic Chemistry,	heterocyclic
					Organic Chemistry,	compounds.
					Physical Chemistry,	Explain the terms
					Analytical	involved in kinetics
					Chemistry,	and methods of
					Pharmaceutical	determination of order
					Chemistry, Food	of the reaction, and
					Chemistry and Small	understand the
					Scale Chemistry.	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.
B.Sc. Chemistry	UACHB20	Allied Chemistry II	Our curriculum meets the global requirements and enables students to pursue higher studies in educational institutions abroad.	Attain knowledge and understand the principles and concepts in the respective discipline.	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.	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

R Sc. Chamistry	UACHC20	Allied	Our curriculum meets the	Attain knowledge	Demonstrate a firm	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	Chemistry Practicals II	our curriculum meets the global requirements and enables students to pursue higher studies in educational institutions abroad.	Attain knowledge and understand the principles and concepts in the respective discipline.	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.	Acquire skills in acid-base titrations. Acquire skill in Permanganates Acquire skill in determining hardness of water Analyse the elements present in organic compounds. Analyse the functional groups present in organic compounds

B.Sc. Computer Science	UCCSH20	Windows Programming with VB.NET	To understand the concepts of Windows Programming.	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 the concepts of windows programming.
B.Sc. Computer	UCCSJ20	Operating	To analyze, processes,	Attain knowledge	Understand the basic	Acquire the
Science		System	resource control (concurrency etc.), physical and virtual memory, scheduling, I/O.	and understand the principles and concepts in the respective discipline.	concepts of system software, hardware and evolution of computer graphics.	Knowledge of important computer system resources and the role of operating system in their management policies and algorithms.
B.Sc. Computer Science	UCCSK20	Practical-VI: Linux	To provide the skills in Linux Shell Script.	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.	Obtain a foundation for an advanced course in operating systems.
B.Sc. Computer Science	UCCSL20	Practical-VII: Python Programming	To Implement Object Oriented Programming concepts in Python	Acquire and apply analytical, critical and creative thinking, and problem-solving skills	Demonstrate the knowledge on appropriate theory, practices and tools for the specification,	Develop real-world applications using oops, files and exception handling provided by python.

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					design and implementation.	
B.Sc. Computer	UCCSM20	Relational	The objective of this	Attain knowledge	Utilize the practical	Apply the SQL
Science		Database	course is to expose the	and understand the	skill to examine, plan	commands to create
		Management	students to the	principles and	and engineer the	tables and Triggers,
		Systems	fundamentals and basic	concepts in the	applications of	insert/update/delete
			concepts in relational Data	respective discipline.	technology using	data, and query data in
			Base Management		computing tools and	a relational DBMS.
			Systems		techniques.	
B.Sc. Computer	UCCSN20	.NET	Understand code solutions	Acquire and apply	Utilize the practical	Create Windows
Science		Programming in	and compile C# projects	analytical, critical	skill to examine, plan	Applications and Web
		C#	within the .NET	and creative thinking,	and engineer the	- based Applications
			framework.	and problem-solving	applications of	
				skills	technology using	
					computing tools and	
					techniques.	
B.Sc. Computer	UECSB20	Elective-I B:	To understand expose to	Attain knowledge	Ability to attain	Understand Data
Science		Data Mining	various Data Mining	and understand the	knowledge and	Warehouse
			techniques.	principles and	understand the	fundamentals and
				concepts in the	mathematical and	Data Mining
				respective discipline.	logical concepts,	Principles
					algorithmic	
					principles and	
					computer	
					fundamentals.	

B.Sc. Computer	UCCSP20	Practical-VIII:	The objective of this	Acquire and apply	Demonstrate the	Understand,
Science		RDBMS	course is to expose the	analytical, critical	knowledge on	Appreciate and
			students to the	and creative thinking,	appropriate theory,	effectively explain the
			fundamentals and basic	and problem-solving	practices and tools	underlying concepts
			concepts in relational Data	skills	for the specification,	of Database
			Base Management		design and	technologies.
			Systems.		implementation.	Programming PL/SQL
						including stored
						procedures, stored
						functions, cursors,
						package.
B.Sc. Computer	UCCSQ20	Practical-IX:	Understand code solutions	Acquire and apply	Demonstrate the	Utilize the practical
Science		.NET	and compile C# projects	analytical, critical	knowledge on	skill to examine, plan
		Programming in	within the .NET	and creative thinking,	appropriate theory,	and engineer the
		C#	framework.	and problem-solving	practices and tools	applications of
				skills	for the specification,	technology using
					design and	computing tools and
					implementation.	techniques.
B.Sc. Computer	UCCSR20	Internet and	Enhance the programming	Acquire and apply	Demonstrate the	Build dynamic web
Science		Web	experience with the help	analytical, critical	knowledge on	pages using JavaScript
		Programming	of tools like editors and	and creative thinking,	appropriate theory,	(Client Side
			debuggers that makes	and problem-solving	practices and tools	Programming) and
			JavaScript coding easier	skills	for the specification,	apply their knowledge
			and more interactive		design and	to create interactive
					implementation.	websites.

B.Sc. Computer	UCCSS20	Cloud	Understand the concepts	Pursue higher	Apply the recent	Understand and
Science		Computing	of cloud computing	knowledge, qualify	technology in	familiar with the
			technologies.	professionally,	multidisciplinary	deployment models.
				enhance	domains and evaluate	
				entrepreneurial skills	the methods to	
				and contribute	implement it, to	
				towards the needs of	create high level	
				the society.	design and	
					implement robust	
					software applications	
					using latest	
					technological skills.	
B.Sc. Computer	UECSD20	Elective-II B:	Understand the key	Attain knowledge	Understand the basic	Understand the key
Science		Data Science	concepts of data science	and understand the	concepts of system	concepts in data
			and its applications.	principles and	software, hardware	science, its
				concepts in the	and evolution of	applications and the
				respective discipline.	computer graphics.	toolkit used by data
						scientists.
B.Sc. Computer	UECSE20	Elective-III A:	Become familiar with	Pursue higher	Utilize the practical	Understand different
Science		Artificial	basic principles of AI	knowledge, qualify	skill to examine, plan	types of AI Agents
		Intelligence	toward problem solving	professionally,	and engineer the	and its Environments
			inference, perception,	enhance	applications of	
			knowledge representation,	entrepreneurial skills	technology using	
			and learning.	and contribute	computing tools and	
				towards the needs of	techniques.	
				the society.		

B.Sc. Computer	UCCST20	Practical-X:	Build a simple, yet	Acquire and apply	Demonstrate the	Create PHP programs
Science		Internet and	functional web application	analytical, critical	knowledge on	that use various PHP
		Web	using PHP/MySQL.	and creative thinking,	appropriate theory,	library functions, and
		Programming		and problem-solving	practices and tools	that manipulate files
				skills	for the specification,	and directories.
					design and	
					implementation.	
B.Sc.	UCMAA20	Algebra and	Course is designed to	Attain knowledge	Capability to solve	Perceive the
Mathematics		Trigonometry	improve problem solving	and understand the	problems in	fundamental concepts
			skills in Algebra and	principles and	computer graphics	in the theory of
			Trigonometry.	concepts in the	using concepts of	equations.
				respective discipline.	linear algebra.	Solve various types
				Acquire and apply	Ability to provide	of higher order
				analytical, critical	new solutions using	equations.
				and creative thinking,	the domain	Know about matrices
				and problem solving	knowledge of	and their applications.
				skills.	mathematics.	Solve problems
						involving
						trigonometric
						functions.
						Analyse and relate
						hyperbolic and
						circular functions.

B.Sc.	UCMAB20	Calculus	Course is designed to	Attain knowledge	Capability to	Calculate the radius
Mathematics			introduce the basic	and understand the	demonstrate	of curvature, center of
			properties of integrals,	principles and	comprehensive	curvature, Evolutes
			understand the concepts of	concepts in the	knowledge of	and Involutes.
			multiple integration and	respective discipline.	Mathematics and	Understand and find
			improve the analytical	Acquire and apply	understand one or	the asymptotes of
			skills	analytical, critical	more disciplines	rational curves.
				and creative thinking,	which form a part of	Determine the area
				and problem solving	an undergraduate	and volume by
				skills.	programmer of	applying the technique
					study. Ability to	of double and triple
					employ critical	integrals.
					thinking in	Determine and use
					understanding the	various techniques to
					concepts in every	solve the variety of
					area of Mathematics.	integration problems.
					Ability to analyze the	Evaluate beta and
					results and apply	gamma functions and
					them in various	apply beta and gamma
					problems appearing	functions in double
					in different branches	and triple integrals.
					of mathematics.	

B.Sc.	UCMAC20	Vector Analysis	Course is designed to	Attain knowledge	Disciplinary	Compute divergence,
Mathematics		and Fourier	understand the	and understand the	knowledge	curl, directional
		Series	fundamental concepts of	principles and	Capability to	derivatives and
			vector analysis and apply	concepts in the	demonstrate	Gradients.
			the various techniques of	respective discipline.	comprehensive	Calculate the unit
			vector integration in	Acquire and apply	knowledge of	normal and tangent to
			solving volume and	analytical, critical	Mathematics and	the surface.
			surface integrals; and also	and creative thinking,	understand one or	Evaluate line
			to define Fourier series	and problem solving	more disciplines	integrals, surface
			and express periodic	skills Effectively	which form a part of	integrals and volume
			functions as infinite series	communicate general	an undergraduate	integrals using vector
				and discipline-	programme of study.	integration.
				specific information,	Communication	Verify and Apply
				ideas and opinions.	skills	Green's Theorem,
				Pursue higher	Ability to	Gauss divergence
				knowledge, qualify	communicate various	Theorem, Stoke's
				professionally,	concepts of	Theorem.
				enhance	mathematics	Understand the nature
				entrepreneurial skills	effectively using	of the Fourier series
				and contribute	examples and their	and find the Fourier
				towards the needs of	geometrical	coefficients.
				the society.	visualizations.	
					Ability to use	
					mathematics as a	
					precise language of	
					communication in	
					other branches of	

	human knowledge
	and communicate
	long standing
	unsolved problems in
	mathematics.
	Ability to explain the
	development of
	mathematics in the
	civilizational context
	and its
	role as queen of all
	sciences.
	Problem solving
	Capability to solve
	problems in
	computer graphics
	using concepts of
	linear algebra.
	Ability to provide
	new solutions using
	the domain
	knowledge of
	mathematics.

B.Sc.	UCMAD20	Differential	Course is designed to	Attain knowledge	Disciplinary	Solve the standard
Mathematics		Equations and	improve problem solving	and understand the	knowledgeCapability	forms of first order
		Laplace	skills in Differential	principles and	to demonstrate	differential equations.
		Transforms	Equations and Laplace	concepts in the	comprehensive	Solve the second order
			Transforms and To expose	respective discipline.	knowledge of	differential equations
			students to different	Acquire and apply	Mathematics and	with constant
			techniques of finding	analytical, critical	understand one or	coefficients and
			solution to these	and creative thinking,	more disciplines	variable coefficients.
			equations.	and problem solving	which form a part of	Find the complete,
				skills Effectively	an undergraduate	singular and general
				communicate general	programme of study.	integral of PDE.
				and discipline-	Communication	Analyze the properties
				specific information,	skillsi. Ability to	of Laplace
				ideas and opinions.	communicate various	Transforms. Solve
				Pursue higher	concepts of	differential equations
				knowledge, qualify	mathematics	using Laplace
				professionally,	effectively using	Transforms.
				enhance	examples and their	
				entrepreneurial skills	geometrical	
				and contribute	visualizations.iii.	
				towards the needs of	Ability to show the	
				the society.	importance of	
					mathematics as	
					precursor to various	
					scientific	
					developments since	
					the beginning of the	

					civilization.iv.	
					Ability to explain the	
					development of	
					mathematics in the	
					civilizational context	
					and itsrole as queen	
					of all	
					sciences.Problem	
					solvingiii. Ability to	
					solve linear system	
					of equations, linear	
					programming	
					problems and	
					network flow	
					problems.iv. Ability	
					to provide new	
					solutions using the	
					domain knowledge	
					of mathematics.	
B.Sc.	UCMAE20	Solid Geometry	To understand and deepen	Attain knowledge	Disciplinary	The learners will be
Mathematics			the knowledge related to	and understand the	knowledge	able to Comprehend
			three-dimensional	principles and	Capability to	the basic concepts of
			Analytical Solid Geometry	concepts in the	demonstrate	plane and find the
				respective discipline.	comprehensive	equation of a plane
				Acquire and apply	knowledge of	under given
				analytical, critical	Mathematics and	conditions.
				and creative thinking,	understand one or	Understand the basic

		and muchlane actrics	mana dia simlimas	and and a of atual al-t
		and problem solving	more disciplines	concepts of straight
		skills.	which form a part of	line and skew lines
		Effectively	an undergraduate	and also find the
		communicate general	programme of study.	equation of a straight
		and discipline-	Communication	line under given
		specific information,	skills	conditions, find the
		ideas and opinions.	Ability to	length and equations
		Pursue higher	communicate various	of the shortest
		knowledge, qualify	concepts of	distance between two
		professionally,	mathematics	skew lines.
		enhance	effectively using	Understand the basic
		entrepreneurial skills	examples and their	concepts of sphere and
		and contribute	geometrical	find the equation of a
		towards the needs of	visualizations.	sphere under given
		the society.	Ability to use	conditions.
			mathematics as a	Familiarize with cone,
			precise language of	right circular cone,
			communication in	enveloping cone and
			other branches of	reciprocal cone and
			human knowledge	also find the
			and communicate	respective equations
			long standing	under given
			unsolved problems in	conditions.
			mathematics.	Familiarize with
			Critical thinking	cylinder, enveloping
			Ability to employ	cylinder and right
			critical thinking in	circular cylinder and
				> >

					understanding the concepts in every area of Mathematics.	also find the respective equations under given
					Analytical thinking	conditions.
					Ability to analyze the	
					results and apply	
					them in various	
					problems appearing	
					in different branches	
					of mathematics.	
					Problem-solving	
					Ability to provide	
					new solutions using	
					the domain	
					knowledge of	
					mathematics.	
B.Sc.	UCMAF20	Statics	To enhance the ability of	Attain knowledge	: Critical thinking	
Mathematics			learners to apply the	and understand the	Ability to employ	
			knowledge and skills	principles and	critical thinking in	Familiarize with
			acquired by them during	concepts in the	understanding the	subject matter, which
			the course to solve	respective discipline.	concepts in every	has been the single
			specific theoretical and	Acquire and apply	area of Mathematics.	center, to which
			applied problems in	analytical, critical	Analytical thinking	mathematicians,
			Statics.	and creative thinking,	Ability to analyze the	physicists,
				and problem solving	results and apply	astronomers, and
				skills.	them in various	engineers were drawn
					problems appearing	together.

I		in different branches	The denoted discourse
			Understand necessary
		of mathematics.	conditions for the
		Problem solving	equilibrium of
		Ability to provide	particles acted upon
		new solutions using	by various forces and
		the domain	learn the principle of
		knowledge of	virtual work for a
		mathematics.	system of coplanar
			forces acting on a
			rigid body.
			Understand the
			reduction of force
			system to a resultant
			force acting at a base
			point and a resultant
			couple, which is
			independent of the
			choice of base of
			reduction.
			Understand static
			friction that exists
			between a stationary
			object and the surface
			on which it is resting
			and apply the
			knowledge and skills
			to solve specific

						theoretical and applied problems. Construct center of gravity of some
						materialistic systems.
B.Sc.	UAMSA20	Mathematical	Course is designed to	Attain knowledge	Disciplinary	Comprehend the
Mathematics	UANISAZU	Statistics-I	study Statistics from a	and understand the	knowledge	fundamentals of
Wathematics		Statistics-1	purely mathematical	principles and	Capability to	probability.
			standpoint using	concepts in the	demonstrate	Know about random
			Probability theory as well	respective discipline.	comprehensive	variables of one and
			as other branches of	Acquire and apply	knowledge of	two dimensions.
			Mathematics and to	analytical, critical	Mathematics and	Learn about the
			recognize the fundamental	and creative thinking,	understand one or	measures of central
			meanings of correlation	and problem solving	more disciplines	tendency and concepts
			and regression.	skills Effectively	which form a part of	of moments.
			1	communicate general	an undergraduate	Acquire knowledge
				and discipline-	programme of study.	about discrete and
				specific information,	Communication	continuous
				ideas and opinions.	skills	distributions.
				Appreciate	Ability to	Apply correlation and
				biodiversity and	communicate various	regression for the
				enhance eco-	concepts of	investigation of
				consciousness for	mathematics	relationship between
				sustainable	effectively using	the variables
				development of the	examples and their	
				society. Pursue	geometrical	
				higher knowledge,	visualizations.	

				qualify	Ability to show the	
				professionally,	importance of	
				enhance	mathematics as	
				entrepreneurial skills	precursor to various	
				and contribute	scientific	
				towards the needs of	developments since	
				the society.	the beginning of the	
					civilization.	
					Ability to explain the	
					development of	
					mathematics in the	
					civilizational context	
					and its	
					role as queen of all	
					sciences.	
					Problem solving	
					Ability to provide	
					new solutions using	
					the domain	
					knowledge of	
					mathematics.	
B.Sc.	UCMAG20	Operations	To apply problem solving	Attain knowledge	Disciplinary	The learners will be
Mathematics		Research	skills to real life	and understand the	knowledge	able to
			situations. To	principles and	Capability to	
			develop logical and	concepts in the	demonstrate	Translate the real-
			analytical skills.	respective discipline.	comprehensive	world problems into
				Acquire and apply	knowledge of	linear programming

	analytical, critical	Mathematics and	problems and obtain
	and creative thinking,	understand one or	solutions.
	and problem solving	more disciplines	Apply the
	skills.	which form a part of	transportation problem
	Effectively	an undergraduate	techniques for the
	communicate general	programme of study.	optimization of cost.
	and discipline-	Communication	Solve the assignment
	specific information,	skills	problem which deals
	ideas and opinions.	Ability to	with the allocation of
	Pursue higher	communicate various	various sources to
	knowledge, qualify	concepts of	various destinations
	professionally,	mathematics	on one-to-one basis.
	enhance	effectively using	Find the optimum
	entrepreneurial skills	examples and their	strategies of the
	and contribute	geometrical	players and the value
	towards the needs of	visualizations.	of the 2-person games.
	the society.	Ability to use	Perform network
		mathematics as a	planning using PERT
		precise language of	& CPM techniques
		communication in	which provide a
		other branches of	methodology for
		human knowledge	planning and
		and communicate	controlling of a
		long standing	project.
		unsolved problems in	
		mathematics.:	
		Critical thinking	

	Ability to employ
	critical thinking in
	understanding the
	concepts in every
	area of Mathematics.
	Analytical thinking
	Ability to analyze the
	results and apply
	them in various
	problems appearing
	in different branches
	of mathematics.
	Problem-solving
	iii. Ability to solve
	linear system of
	equations, linear
	programming
	problems and
	network flow
	problems.
	Ability to provide
	new solutions using
	the domain
	knowledge of
	mathematics.
	manomatics.

B.Sc.	UCMAH20	Dynamics	To enhance the ability of	Attain knowledge	Disciplinary	Familiarize with
Mathematics			learners to apply the	and understand the	knowledge	subject matter, which
			knowledge and skills	principles and	Capability to	has been the single
			acquired by them during	concepts in the	demonstrate	center, to which
			the course to solve	respective discipline.	comprehensive	mathematicians,
			specific theoretical and	Acquire and apply	knowledge of	physicists,
			applied problems in	analytical, critical	Mathematics and	astronomers, and
			Dynamics.	and creative thinking,	understand one or	engineers were drawn
				and problem solving	more disciplines	together.
				skills	which form a part of	Understand behavior
				Effectively	an undergraduate	of motion of objects.
				communicate general	programme of study.	Understand simple
				and discipline-	Communication	harmonic motion and
				specific information,	skills	projectiles.
				ideas and opinions.	Ability to	Express the effects of
				Appreciate	communicate various	impact of spheres.
				biodiversity and	concepts of	Demonstrate methods
				enhance eco-	mathematics	to locate central
				consciousness for	effectively using	orbits.
				sustainable	examples and their	Apply the knowledge
				development of the	geometrical	and skills to solve
				society.	visualizations.	specific theoretical
				Emulate positive	Ability to use	and applied problems
				social values and	mathematics as a	
				exercise leadership	precise language of	
				qualities and team	communication in	
				work.	other branches of	

	T	T	I I
		Pursue higher	human knowledge
		knowledge, qualify	and communicate
		professionally,	long standing
		enhance	unsolved problems in
		entrepreneurial skills	mathematics.
		and contribute	Ability to show the
		towards the needs of	importance of
		the society	mathematics as
			precursor to various
			scientific
			developments since
			the beginning of the
			civilization.
			Ability to explain the
			development of
			mathematics in the
			civilizational context
			and its role as queen
			of all sciences.
			Critical thinking
			Ability to employ
			critical thinking in
			understanding the
			concepts in every
			area of Mathematics.
			Analytical thinking
			Ability to analyze the
1	I	l	

	results and apply
	them in various
	problems appearing
	in different branches
	of mathematics.
	Problem solving
	Capability to solve
	problems in
	computer graphics
	using concepts of
	linear algebra.
	Capability to solve
	various models such
	as growth and decay
	models, radioactive
	decay model, drug
	assimilation, LCR
	circuits and
	population models
	using techniques
	of differential
	equations.
	Ability to solve
	linear system of
	equations, linear
	programming
	problems and
	proteins and

		society. Pursue	geometrical	has been fitted to a
		higher knowledge,	visualizations.	data that best fits the
		qualify	Ability to show the	population from
		professionally,	importance of	which the data was
		enhance	mathematics as	sampled.
		entrepreneurial skills	precursor to various	
		and contribute	scientific	
		towards the needs of	developments since	
		the society.	the beginning of the	
			civilization.	
			Ability to explain the	
			development of	
			mathematics in the	
			civilizational context	
			and its	
			role as queen of all	
			sciences.	
			Problem solving	
			Ability to provide	
			new solutions using	
			the domain	
			knowledge of	
			mathematics.	

B.Sc.	UCMAI20	Abstract	To enable understanding	Attain knowledge	Disciplinary	The learners will be
Mathematics		Algebra	of fundamental algebraic	and understand the	knowledge	able to
			structures	principles and	Capability to	Understand the
				concepts in the	demonstrate	concepts of groups
				respective discipline.	comprehensive	and sub groups.
				Acquire and apply	knowledge of	Know about normal
				analytical, critical	Mathematics and	subgroups, quotient
				and creative thinking,	understand one or	groups,
				and problem solving	more disciplines	homomorphisms and
				skills.	which form a part of	isomorphisms.
				Effectively	an undergraduate	Understand the
				communicate general	programme of study.	concepts of
				and discipline-	Communication	automorphisms for
				specific information,	skills	constructing new
				ideas and opinions.	Ability to	groups from the given
				Pursue higher	communicate various	groups.
				knowledge, qualify	concepts of	Have knowledge on
				professionally,	mathematics	concepts of ring
				enhance	effectively using	theory.
				entrepreneurial skills	examples and their	Understand the
				and contribute	geometrical	concepts of maximal
				towards the needs of	visualizations.	ideals, Euclidean rings
				the society.	. Ability to use	and particular integral
					mathematics as a	domain.
					precise language of	
					communication in	
					other branches of	

	human knowledge
	and communicate
	long standing
	unsolved problems in
	mathematics.:
	Critical thinking
	Ability to employ
	critical thinking in
	understanding the
	concepts in every
	area of Mathematics.
	Analytical thinking
	Ability to analyze the
	results and apply
	them in various
	problems appearing
	in different branches
	of mathematics.
	Problem-solving
	Ability to provide
	new solutions using
	the domain
	knowledge of
	mathematics.

B.Sc.	UCMAJ20	Real Analysis –	Course is designed to	Attain knowledge	Disciplinary	Know the basic
Mathematics		I	familiarize the students to	and understand the	knowledge	properties of the real
			concepts of sequences,	principles and	Capability to	line and real number
			limits of sequences, limits	concepts in the	demonstrate	system.
			of functions and	respective discipline.	comprehensive	Understand the
			continuity and to	Acquire and apply	knowledge of	fundamentals of
			introduce the concepts of	analytical, critical	Mathematics and	sequences and to
			convergent, divergent and	and creative thinking,	understand one or	calculate their limits.
			bounded sets.	and problem solving	more disciplines	Recognize the
				skills	which form a part of	arithmetic properties
				Effectively	an undergraduate	of convergence and
				communicate general	programme of study.	divergence of
				and discipline-	Communication	sequence and series.
				specific information,	skills	Learn the properties of
				ideas and opinions.	Ability to show the	metric space and its
					importance of	type. Know about
					mathematics as	continuous function
					precursor to various	and its reformulation.
					scientific	
					developments since	
					the beginning of the	
					civilization.	
					Ability to explain the	
					development of	
					mathematics in the	
					civilizational context	
					and its	

					role as queen of all sciences. Critical thinking Ability to employ critical thinking in understanding the concepts in every area of Mathematics. Analytical thinking	
					Ability to analyze the results and apply them in various	
					problems appearing in different branches	
					of mathematics.	
B.Sc.	UCMAK20	Complex	Course is designed to	Attain knowledge	Disciplinary	Know to define and
Mathematics		Analysis	introduce the fundamental	and understand the	knowledge	give some of the
			ideas of the functions of	principles and	Capability to	important properties
			complex variable and to	concepts in the	demonstrate	of complex analytic
			impart the basic	respective discipline.	comprehensive	functions.
			knowledge of	Acquire and apply	knowledge of	Learn certain
			holomorphic functions,	analytical, critical	Mathematics and	elementary functions
			Cauchy's integral formula	and creative thinking,	understand one or	with special reference
			and the residue theorem.	and problem-solving	more disciplines	to the correspondence
				skills.	which form a part of	between certain
				Effectively	an undergraduate	portions of the z-plane
				communicate general	programme of study.	and w-plane as

		and discipline-	Communication	determined by the
		specific information,	skills	relation between the
		ideas and opinions.	Ability to show the	function w and the
		racus una opinions.	importance of	independent variable.
			mathematics as	Become familiar with
			precursor to various	the integrals of
			scientific	analytic functions
			developments since	where many
			the beginning of the civilization.	properties from
				calculus is carried
			Ability to explain	over to complex case.
			the development of	Expand the concept of
			mathematics in the	sequence and series
			civilizational context	which plays a major
			and its	part of calculus to the
			role as queen of all	complex domain.
			sciences.	Learn to compute
			Critical thinking	residues, which allow
			Ability to employ	the determination of
			critical thinking in	general contour
			understanding the	integrals.
			concepts in every	
			area of Mathematics.	
			Analytical thinking	
			Ability to analyze the	
			results and apply	
			them in various	

					problems appearing in different branches of mathematics.	
B.Sc.	UEMAC20	Elective - I B:	Course is designed to	Attain knowledge	Disciplinary	Learn about some
Mathematics		Number Theory	introduce students the	and understand the	knowledgeCapability	important results in
			concept of number theory,	principles and	to demonstrate	the theory of numbers
			thereby enhancing the	concepts in the	comprehensive	including the prime
			logical thinking of the	respective discipline.	knowledge of	number theorem,
			students with regard to	Acquire and apply	Mathematics and	Chinese remainder
			applications in security	analytical, critical	understand one or	theorem, Wilson's
			system and to construct	and creative thinking,	more disciplines	theorem and their
			the ability of students to	and problem solving	which form a part of	consequences. Learn
			work independently and	skills Effectively	an undergraduate	about number
			do in-depth study of	communicate general	programme of study.	theoretic functions,
			various notions of number	and discipline-	Communication	modular arithmetic
			theory.	specific information,	skillsiii. Ability to	and their applications.
				ideas and opinions.	show the importance	Familiarize with
					of mathematics as	modular arithmetic
					precursor to various	and find primitive
					scientific	roots of prime and
					developments since	composite numbers.
					the beginning of the	Know about open
					civilization.iv.	problems in number
					Ability to explain the	theory, namely, the
					development of	Goldbach conjecture
					mathematics in the	and twin-prime
					civilizational context	conjecture.

					and itsrole as queen	Apply public crypto
					of all sciences.:	systems, in particular,
					Critical	RSA.
					thinkingAbility to	
					employ critical	
					thinking in	
					understanding the	
					concepts in every	
					area of Mathematics.	
					Analytical thinking	
					Ability to analyze the	
					results and apply	
					them in various	
					problems appearing	
					in different branches	
					of mathematics.	
B.Sc.	UCMAL20	Linear Algebra	To familiarize the	Attain knowledge	Disciplinary	The learners will be
Mathematics			concepts of linear	and understand the	knowledge	able to Understand the
			transformation and their	principles and	Capability to	concepts of basis,
			matrices.	concepts in the	demonstrate	linear dependence and
				respective discipline.	comprehensive	independence.
				Acquire and apply	knowledge of	Analyze the concepts
				analytical, critical	Mathematics and	of dual spaces in
				and creative thinking,	understand one or	vector space and inner
				and problem solving	more disciplines	product space.
				skills.	which form a part of	Understand the
				Effectively	an undergraduate	concepts of linear

		communicate general	programme of study.	transformation,
		and discipline-	Communication	characteristic roots
		_	skills	and characteristic
		specific information,		
		ideas and opinions.	Ability to	vectors.
		Pursue higher	communicate various	Obtain the matrix for
		knowledge, qualify	concepts of	linear transformations.
		professionally,	mathematics	Acquire knowledge
		enhance	effectively using	about determinants,
		entrepreneurial skills	examples and their	trace and transpose by
		and contribute	geometrical	linear transformations.
		towards the needs of	visualizations.	
		the society.	Ability to use	
			mathematics as a	
			precise language of	
			communication in	
			other branches of	
			human knowledge	
			and communicate	
			long standing	
			unsolved problems in	
			mathematics.:	
			Critical thinking	
			Ability to employ	
			critical thinking in	
			understanding the	
			concepts in every	
			area of Mathematics.	
			area of Mathematics.	

					Analytical thinking	
					Ability to analyze the	
					results and apply	
					them in various	
					problems appearing	
					in different branches	
					of mathematics.	
					Problem-solving	
					Capability to solve	
					problems in	
					computer graphics	
					using concepts of	
					linear algebra.	
					iv. Ability to provide	
					new solutions using	
					the domain	
					knowledge of	
					mathematics.	
B.Sc.	UCMAM20	Real Analysis -	Course is designed to	Attain knowledge	Disciplinary	Understand some
Mathematics		II	create an interest and to	and understand the	knowledge	properties of metric
			deepen the knowledge of	principles and	Capability to	spaces like openness,
			students in concepts of	concepts in the	demonstrate	closedness,
			real analysis, to make the	respective discipline.	comprehensive	boundedness and
			students think logically	Acquire and apply	knowledge of	totally boundedness.
			and objectively and to	analytical, critical	Mathematics and	Know the
			make the students	and creative thinking,	understand one or	fundamental concepts
			understand the difference	and problem solving	more disciplines	of complete and

between the Riemann and	skills	which form a part of	compact metric space.
Lebasque integrability.	Effectively	an undergraduate	Apply the properties
3	communicate general	programme of study.	of Riemann integrable
	and discipline-	Communication	functions.
	specific information,	skills	Assimilate the concept
	ideas and opinions.	Ability to show the	of partition on an
	1	importance of	interval in R and
		mathematics as	understand about
		precursor to various	Lebesgue
		scientific	integrability.
		developments since	Acquire knowledge
		the beginning of the	about measurable
		civilization.	functions and their
		Ability to explain the	properties.
		development of	
		mathematics in the	
		civilizational context	
		and its role as queen	
		of all sciences.	
		Critical thinking	
		Ability to employ	
		critical thinking in	
		understanding the	
		concepts in every	
		area of Mathematics.	
		Analytical thinking	
		Ability to analyze the	

					results and apply	
					them in various	
					problems appearing	
					in different branches	
					of mathematics.	
B.Sc.	UEMAC20	Elective - II A:	Course is designed to	Attain knowledge	Disciplinary	Understand the basic
Mathematics		Graph Theory	introduce the students to	and understand the	knowledge	graph theory concepts
			the beautiful and elegant	principles and	Capability to	Analyse the
			theory of graphs and to	concepts in the	demonstrate	connectedness in
			study and develop the	respective discipline.	comprehensive	graphs using vertices
			concepts of different	Acquire and apply	knowledge of	and edges.
			graphs.	analytical, critical	Mathematics and	Identify the
				and creative thinking,	understand one or	uniqueness of paths
				and problem solving	more disciplines	using tree concepts.
				skills	which form a part of	Acquire wide
				Effectively	an undergraduate	knowledge of
				communicate general	programme of study.	mathematical
				and discipline-	Communication	principles of graphs
				specific information,	skills	Understand the
				ideas and opinions.	iii. Ability to show	emerging research
				Appreciate	the importance of	topics based on graphs
				biodiversity and	mathematics as	
				enhance eco-	precursor to various	
				consciousness for	scientific	
				sustainable	developments since	
				development of the	the beginning of the	
				society.	civilization.	

		Pursue higher	iv. Ability to explain
		knowledge, qualify	the development of
		professionally,	mathematics in the
		enhance	civilizational context
		entrepreneurial skills	and its role as queen
		and contribute	of all sciences.
		towards the needs of	Critical thinking
		the society.	Ability to employ
			critical thinking in
			understanding the
			concepts in every
			area of Mathematics.
			Analytical thinking
			Ability to analyze the
			results and apply
			them in various
			problems appearing
			in different branches
			of mathematics.
			Digital literacy
			Capability to
			understand and apply
			the programming
			concepts of C and
			C++ to mathematical
			investigations and
			problem solving.

B.Sc.	UEMAD20	Elective - II B:	Course is designed to	Attain knowledge	Disciplinary	Learn about partially
Mathematics		Discrete	introduce students to the	and understand the	knowledge	ordered sets.
		Mathematics	concept of basic discrete	principles and	Capability to	Understand lattices
			mathematics, thereby	concepts in the	demonstrate	and their types.
			enhancing the logical	respective discipline.	comprehensive	Understand Boolean
			thinking of the students	Acquire and apply	knowledge of	algebra and Boolean
			with regard to discrete	analytical, critical	Mathematics and	functions, logic gates,
			domain, to train the	and creative thinking,	understand one or	switching circuits and
			students in the	and problem solving	more disciplines	their applications.
			applications of the discrete	skills	which form a part of	Solve real-life
			mathematical structures	Effectively	an undergraduate	problems using finite-
			and to construct the ability	communicate general	programme of study.	state and Turing
			of students to work	and discipline-	Communication	machines.
			independently and do in-	specific information,	skills	Assimilate various
			depth study of various	ideas and opinions.	Ability to show the	graph theoretic
			notions of discrete	Appreciate	importance of	concepts and
			mathematics.	biodiversity and	mathematics as	familiarize with their
				enhance eco-	precursor to various	applications.
				consciousness for	scientific	
				sustainable	developments since	
				development of the	the beginning of the	
				society.	civilization.	
				Pursue higher	Ability to explain	
				knowledge, qualify	the development of	
				professionally,	mathematics in the	
				enhance	civilizational context	
				entrepreneurial skills	and its role as queen	

				and contribute	of all sciences.	
				towards the needs of	Critical thinking	
				the society.	Ability to employ	
					critical thinking in	
					understanding the	
					concepts in every	
					area of Mathematics.	
					Analytical thinking	
					Ability to analyze the	
					results and apply	
					them in various	
					problems appearing	
					in different branches	
					of mathematics.	
B.Sc.	USMAD20	SBE VI: Fuzzy	Course is designed to	Attain knowledge	Disciplinary	Distinguish between
Mathematics		Set Theory	explain the emergence of	and understand the	knowledge	classical crisp set and
			fuzzy set from an	principles and	Capability to	fuzzy set using
			historical perspective and	concepts in the	demonstrate	characteristic function
			to introduce the basic	respective discipline.	comprehensive	and membership
			concepts of the existing	Acquire and apply	knowledge of	function respectively.
			research topic fuzzy sets.	analytical, critical	Mathematics and	Understand the
				and creative thinking,	understand one or	operations on the
				and problem solving	more disciplines	fuzzy set which are
				skills	which form a part of	generalization of crisp
				Effectively	an undergraduate	set operations.
				communicate general	programme of study.	Represent the notion
				and discipline-	Communication	of fuzzy relational

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	specific information,	skills	equations based upon
	ideas and opinions.	iii. Ability to show	the max-min
		the importance of	composition.
		mathematics as	Model fuzzy graphs
		precursor to various	which provide
		scientific	provision to represent
		developments since	different types of
		the beginning of the	relationships
		civilization.	Know about the fuzzy
		Ability to explain the	number which is a
		development of	special form of a
		mathematics in the	fuzzy set on the set of
		civilizational context	real numbers.
		and its role as queen	
		of all sciences.	
		Critical thinking	
		Ability to employ	
		critical thinking in	
		understanding the	
		concepts in every	
		area of Mathematics.	
		Analytical thinking	
		Ability to analyze the	
		results and apply	
		them in various	
		problems appearing	
		in different branches	

					of mathematics.	
B.Sc.	UCMBD20	Basic	The syllabus is designed	Effectively	Acquire an in-depth	Discuss the overall
Microbiology		Immunology	to provide knowledge on	communicate general	knowledge on the	organization of the
		and Microbial	immunity and organs of	and discipline-	fundamental	immune system and
		genetics- I	immune system, types of	specific information,	concepts and scope	differentiate the
			antigens and antibody	ideas and opinions.	of Microbiology and	humoral and cell
			interactions and the role of		its related fields.	mediated immune
			DNA as a basic unit of			mechanisms.
			gene expression.			Explain about types
						of antigen, 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.	UCMBE20	Applied	The syllabus is designed	Attain knowledge	Develop and execute	Outline and apply the
Microbiology		Immunology	to familiarize students on	and understand the	oral and writing	basic principle and
		and Microbial	the antigen antibody	principles and	skills necessary for	mechanism of antigen
		genetics- II	reactions invivo and	concepts in the	effective	and antibody
			exvivo and an in depth	respective discipline.	communication of	reactions.

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			understanding on the		discipline specific	Discuss on the
			central dogma of		information and	significance of
			molecular biology.		experimental results.	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.	UCMBF20	Basic and	To course is framed to	Acquire and apply	Develop and execute	Identify the ABO
Microbiology		Applied	impart hands on training	analytical, critical	oral and writing	blood groups and its
		Immunology	on various agglutination	and creative thinking,	skills necessary for	Rh types.
			and precipitation reaction	and problem-solving	effective	Enumerate and
			and to provide an insight	skills	communication of	observe various
			in identifying the cells of		discipline specific	granulocytic and

			immune system.		information and	agranulocytic cells of
					experimental results.	immune system.
						Perform serological
						diagnosis for the
						detection of typhoid,
						syphilis, rheumatoid
						factor and anti
						streptolysin 'o'.
						Demonstrate the
						direct and indirect
						pregnancy testing
						procedure.
						Quantitate the
						antigens and
						antibodies by
						performing
						immunodiffusion
						techniques.
B.Sc.	UCMBH20	Food, Dairy and	The course is designed	Pursue higher	Realize the	Understand the role
Microbiology		Industrial	for the learners to provide	knowledge, qualify	application-oriented	of microorganisms in
		Microbiology	knowledge on food	professionally,	aspects of	food and the factors
			preservation, causes of	enhance	Microbiology and	influencing their
			spoilage, control and	entrepreneurial skills	assimilate the	growth Apply the
			preventive measures from	and contribute	technical skills in	principles and
			harmful microorganisms;	towards the needs of	basic, medical and	procedures involved
			acquire idea about	the society.	applied	in preservation of
			fermentation technology		Microbiology.	food. Identifying the

and commercially	spoilage causing
important microbial	microorganisms in
_	
products.	various foods and
	analysing the
	significance of food
	borne and milk borne
	diseases in association
	with public health.
	Formulate knowledge
	on the fermentation
	process with adequate
	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.	UCMBI20	Molecular	The course is framed for	Acquire and apply	Attain higher	Compare the use of
Microbiology		Biology and	the learners to understand	analytical, critical	knowledge by	various cloning
		rDNA	the concepts of	and creative thinking,	developing	vectors in gene
		Technology	recombinant DNA	and problem-solving	competency in the	cloning techniques
			technology and strategies	skills	field of Microbiology	and the application of
			involved in gene		assuring and	genetic engineering
			manipulations.		enhancing	and strain
					entrepreneurial skills	improvement using
					for the betterment of	mutational rDNA
					the society.	technology.
						Discuss on the
						methods involved in
						the Production, of
						pharmaceutical
						products and the
						importance of Gene
						therapy.
B.Sc.	UEMBB20	Entrepreneurial	The syllabus is framed to	Pursue higher	Attain higher	Explain the historical
Microbiology		Microbiology	facilitate the students	knowledge, qualify	knowledge by	development of
			understanding on the	professionally,	developing	industrial
			concepts of	enhance	competency in the	Microbiology and
			entrepreneurship such as	entrepreneurial skills	field of Microbiology	outline on the
			Planning, decision	and contribute	assuring and	importance of
			making, leadership,	towards the needs of	enhancing	entrepreneur
			organizations and	the society	entrepreneurial skills	development and risk
			authority.		for the betterment of	assessment.
					the society.	Analyze the microbial

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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 ecoconsciousness for sustainable development of the society.	Understand and explain the diversity of microorganisms and its interaction with the environment for sustainable development.	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. 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.
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B.Sc. Microbiology	UEMBC20	Marine Microbiology	To course makes students understand on the ecological role of microorganisms in marine environment.	Appreciate biodiversity and enhance ecoconsciousness for sustainable development of the society.	Understand and explain the diversity of microorganisms and its interaction with the environment for sustainable development.	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 plantmicrobe interactions. 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
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						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.	UEMBD20	Microbial	The course syllabus	Attain knowledge	Acquire an in-depth	Apply
Microbiology		Nanotechnology	facilitates students	and understand the	knowledge on the	nanotechnology for air
			understanding on	principles and	fundamental	and water treatment
			microbial nanotechnology	concepts in the	concepts and scope	and become familiar
			and its applications.	respective discipline.	of Microbiology and	with nanoscience
					its related fields.	education in India and
						abroad.
B.Sc.	UEMBF20	Advanced	The course is designed to	Pursue higher	Attain higher	Utilize
Microbiology		Microbiology	provide the learners an	knowledge, qualify	knowledge by	microorganisms in the
			overview on the advanced	professionally,	developing	preparation of
			aspects of Microbiology	enhance	competency in the	cosmetics.
				entrepreneurial skills	field of Microbiology	Evaluate the

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				and contribute	assuring and	biological potential in
				towards the needs of	enhancing	samples return from
				the society.	entrepreneurial skills	satellites and solar
					for the betterment of	system.
					the society.	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.	USMBD20	Diagnostic	The course provides the	Effectively	Realize the	Explain general
Microbiology		Microbiology	learners an overview on	communicate general	application-oriented	safety regulations and
			clinical Microbiology,	and discipline-	aspects of	guidelines of
			laboratory organization	specific information,	Microbiology and	Microbiology
			and various diagnostic	ideas and opinions.	assimilate the	laboratory.
			approaches from		technical skills in	Apply procedures in
			traditional to molecular		basic, medical and	the collection and
			methods.		applied	transport of clinical
					Microbiology.	specimens.
						Examine and identify

						the pathogenic microorganisms from clinical specimens. Perform serological and molecular methods for the diagnosis of diseases. Determine the sensitivity and resistance pattern of
						bacterial pathogens to
						various antibiotics.
B.Sc. Physics	UCPHG20	Electricity and	To make the students	Pursue higher	Analyze physical	Gain confidence in
		Magnetism	understand the principles	knowledge, qualify	problems and	their ability to apply
			and theory of	professionally,	develop correct	mathematical methods
			electrostatics, current	enhance	solutions using	to understand
			electricity, thermos	entrepreneurial skills	natural laws.	electromagnetic
			electricity,	and contribute		problems to real-life
			electromagnetism and	towards the needs of		situations
			alternating current.	the society.		
B.Sc. Physics	UCPHH20	Basic	To acquire the knowledge	Acquire and apply	Students will develop	Analysis the working
		Electronics	about the characteristics	analytical, critical	the proficiency in the	of semiconductor
			and working principles of	and creative thinking,	skill of data using a	circuits such as
			semiconductor diodes,	and problem-solving	variety of	rectifiers, Amplifiers,
			transistors, FET, UJT and	skills	laboratory	oscillators, and
			SCR.		instruments	multivibrators.

B.Sc. Physics	UEPHC20	Solid State	To study electrons in	Pursue higher	Students will realize	Understand about
		Physics	solids and key features	knowledge, qualify	and develop an	solid materials and
			distinguishing metals,	professionally,	understanding of the	crystal structure.
			insulators and	enhance	impact of physics	
			semiconductors and	entrepreneurial skills	and science on	
			defects in crystals.	and contribute	society	
				towards the needs of		
				the society.		
B.Sc. Physics	UCPHH20	Atomic Physics	To provide the students	Effectively	Analyze physical	Realize the theories
			with basic ideas of	communicate general	problems and	explaining the
			properties of atoms and	and discipline-	develop correct	structure of atoms and
			ions when subjected to	specific information,	solutions using	the origin of the
			Electric and magnetic	ideas and opinions	natural laws.	observed spectra.
			fields.			
B.Sc. Physics	UCPHJ20	Nuclear Physics	Students learn about	Acquire and apply	Students are also	Demonstrate a
			nuclear models, nuclear	analytical, critical	expected to develop	knowledge of
			reactions, and	and creative thinking,	skills in Physics for	fundamental aspects
			radioactivity. Students	and problem-solving	competitive	of the structure of the
			might also examine	skills	examinations	nucleus, radioactive
			nuclear imaging,			decay, nuclear
			dosimetry, and isotopic			reactions and the
			dating in a course focusing			interaction of
			on nuclear science's			radiation and matter.
			applications.			

B.Sc. Visual	UCVCA20	Introduction to	To give an overview about	Attain knowledge	To Acquire	Identifying the
Communication		Visual	the field of Visual	and understand the	Fundamental	Essential aspects of
		Communication	communication and Visual	principles and	knowledge of Visual	Visual Language.
			language and to enable	concepts in the	communication and	
			them to understand the	respective discipline.	the related study	
			various fields of work in		area.	
			this area			
B.Sc. Visual	UCVCD20	Practical II –	To enable students to try	Attain knowledge	To become	Acquiring knowledge
Communication		Professional	first-hand, the basic	and understand the	competent enough to	in lighting and
		Photography	techniques of photography	principles and	undertake the	exposure techniques
			and to develop the skills	concepts in the	professional job as	
			for a good photographer	respective discipline.	per the demands and	
					requirements of the	
					media and	
					Entertainment	
					Industry.	
B.Sc. Visual	UABAA20	Allied– II:	To provide a basic	Effectively	To become ethically	Acquiring basic
Communication		Basics in	understanding about the	communicate general	committed media	knowledge about
		Advertising	field of Advertising and to	and discipline-	professionals and	advertising media.
			develop skills in creating	specific information,	entrepreneur by	
			media advertisement.	ideas and opinions.	adhering to human	
					values, Indian, and	
					the Global culture.	

B.Sc. Visual	UCVCH20	Practical IV-	To teach students the art	Pursue higher	To make women	Create a short film or
Communication		Post Production	of editing videos through	knowledge, qualify	professionals in	documentary using
		Editing	Adobe Premier CC	professionally,	media and attain	editing techniques.
			software and to complete	enhance	professional	
			basic exercises in editing.	entrepreneurial skills	portfolios to become	
				and contribute	entrepreneurs to	
				towards the needs of	increase	
				the society.	employability.	
B.Sc. Visual	UCVCI20	Media Research	To orient students on the	Acquire and apply	To become ethically	Acquiring
Communication			need for media research	analytical, critical	committed media	Knowledge in Data
			and the techniques and	and creative thinking,	professionals and	Analysis and
			process of research studies	and problem-solving	entrepreneur by	Presentation.
				skills	adhering to human	
					values, Indian, and	
					the Global culture.	
B.Sc. Visual	UCVCJ20	Film	To introduce films as a	Emulate positive	To become ethically	Identifying the
Communication		Appreciation	form of visual	social values and	committed media	concepts of Film as a
			communication and	exercise leadership	professionals and	Mass medium and its
			develop technical	qualities and team	entrepreneur by	Production Stages.
			knowledge and critical	work.	adhering to human	
			outlook towards film		values, Indian, and	
			making		the Global culture.	
B.Sc. Visual	UCVCK20	Digital Public	To initiate students to the	Emulate positive	To become	Evaluating the
Communication		Relations	field of Public Relations	social values and	competent enough to	Process of PR and
			by giving them a	exercise leadership	undertake the	acquiring the
			background, trends and	qualities and team	professional job as	profound knowledge
			techniques in PR	work.	per the demands and	in Public relation

					requirements of the	writing.
					media and	
					Entertainment	
					Industry.	
B.Sc. Visual	UCVCN20	Project -1	To train students in short-	Emulate positive	To make women	Presenting the
Communication		Documentary	film making or	social values and	professionals in	Documentation with
		Production	documentary making by	exercise leadership	media and attain	Master Copy.
			putting into practice the	qualities and team	professional	
			techniques learned in	work.	portfolios to become	
			television production and		entrepreneurs to	
			script writing through		increase	
			team work.		employability.	
B.Sc. Visual	USCMC520	Skill-Based	To enable students know	Effectively	To get equipped	Executing and
Communication		Elective -	about the production	communicate general	with ICT	publishing the E-
		E-Content -	process and techniques of	and discipline-	competencies	contents for formal
		Production	e-content development,	specific information,	including Digital	education.
			implementing effective e-	ideas and opinions.	literacy.	
			content material for			
			education field.			
B.Sc. Visual	UGCMA52	Non-Major	To equip students with	Appreciate	To become ethically	To find the
Communication	0	Elective – I	tools for critical	biodiversity and	committed media	relationship between
		Advertising	consumption of Media.	enhance eco-	professionals and	the social media
				consciousness for	entrepreneur by	alternative media &
				sustainable	adhering to human	democracy.
				development of the	values, Indian, and	
				society.	the Global culture.	

B.Sc. Visual	UCVCP20	Introduction to	• To give students a brief	Effectively	To get equipped	Implementing the
Communication		ICT and New	idea of the evolution of	communicate general	with ICT	ICT tools and
		Media	the Communication and	and discipline-	competencies	techniques in New
			Information Technology,	specific information,	including Digital	Media.
			its effects on Economics	ideas and opinions.	literacy.	
			and working in the New			
			Media			
B.Sc. Visual	UEVCA20	Elective II A: E-	To enable students, know	Effectively	To get equipped	Evaluating the E-
Communication		Content	about the production	communicate general	with ICT	learning platforms and
		Development	process and techniques of	and discipline-	competencies	technologies
			e-content development,	specific information,	including Digital	
			implementing effective e-	ideas and opinions.	literacy.	
			content material for			
			education field.			
B.Sc. Visual	UCVCR20	Project – 2 -	To train students in short-	Emulate positive	To make women	Presenting the
Communication		Short Film	film making or	social values and	professionals in	Documentation with
		Production	documentary making by	exercise leadership	media and attain	Master Copy.
			putting into practice the	qualities and team	professional	
			techniques learned in	work.	portfolios to become	
			television production and		entrepreneurs to	
			script writing		increase	
					employability.	
B.Sc. Visual	USCMD620	Skill-Based	To learn the basic	Attain knowledge	To get equipped	Acquiring the
Communication		Elective	principles of printing and	and understand the	with ICT	Knowledge in final
		Digital	methodologies used for	principles and	competencies	Printing Process.
		Publishing	printing and print	concepts in the	including Digital	
			finishing.	respective discipline.	literacy.	

B.Sc. Visual	UGCMA62	Non-Major	To provide a basic	Effectively	To become ethically	Acquiring basic
Communication	0	Elective - II-	understanding about the	communicate general	committed media	knowledge about
		Advertising	field of Advertising and to	and discipline-	professionals and	advertising Concepts.
			develop skills in creating	specific information,	entrepreneur by	
			media advertisement	ideas and opinions.	adhering to human	
					values, Indian, and	
					the Global culture.	
B.Sc. Zoology	UCZOJ20	Biotechnology	Enable students to venture	Attain knowledge	Undertake further	Explain the scope and
			into R&D.	and understand the	studies in Zoology or	branches of
				principles and	Multidisciplinary	Biotechnology and
				concepts in the	areas.	summarize Genetic
				respective discipline.		Engineering.
						Describe Cloning
						strategies.
						Explain Gene transfer
						mechanism and
						Blotting Techniques.
						Demonstrate Animal
						Cell Culture and
						explain the
						applications of cell
						culture.
						Discuss the
						applications of
						Genetic Engineering
						in various fields.

B.Sc. Zoology	UCZOK20	Environmental	Create awareness on	Appreciate	Undertake further	Explain ecology its
		Biology	Environment issues and	biodiversity and	studies in Zoology or	branches and abiotic
			conservation.	enhance eco-	Multidisciplinary	and biotic components
				consciousness for	areas.	of ecosystem.
				sustainable		Discuss animal
				development of the		association,
				society.		biogeochemical cycle
						and Ecosystem and its
						functions.
						Discuss the structure
						and functions of
						terrestrial and aquatic
						ecosystems.
						Describe the
						Characteristics of
						population,
						Community and
						Ecological Succession
						Discuss the causes of
						pollution their control
						measures and wildlife
						management.
B.Sc. Zoology	UEZOC20	Elective II A	Students will gain	Attain knowledge	Undertake further	Describe the structure
		Microbiology	knowledge about	and understand the	studies in Zoology or	and function of
			microbes, their application	principles and	Multidisciplinary	bacteria and virus.
			in industry and medical	concepts in the	areas.	Apply the process of
			field.	respective discipline.		media preparation and

B.Sc. Zoology	UEZOD20	Elective II B Bioinstrumentati on	Apply the principles and techniques in research.	Attain knowledge and understand the principles and concepts in the respective discipline.	Undertake further studies in Zoology or Multidisciplinary areas.	bacterial culture. Discuss the various sterilization techniques and chemotherapeutic agents. Discuss the role of microbes in food production and preservation. Discuss the disease causing microorganisms. Apply the principle and construction of the instruments. Demonstrate the usage of the instruments. Illustrate the working method of various techniques. Discuss the application of the techniques. Apply the skill of instrumentation and
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						micro techniques.
B.Sc. Zoology	UEZOE20	Elective III A Immunology	Enable to understand the functions of immune system and their application in medical field.	Attain knowledge and understand the principles and concepts in the respective discipline.	Demonstrate comprehensive knowledge on the complexity of life process, their molecular, cellular and physiological process, their genetics, evolution, behaviour and their interrelationship with the environment.	Describe the primary and secondary lymphoid organs. Categorize types of immunity and the cells involved in immunity. Analyse the structure and function of antigens and antibodies. Examine the antigen antibody reaction and its role in transplantation, hypersensitivity, autoimmunity and AIDS. Analyse immunization and its importance in prevention of diseases.

B.Sc. Zoology	USZOF620	Animal	Enable to understand the	Appreciate	Demonstrate	Familiarize with
		Behaviour	normal and abnormal	biodiversity and	comprehensive	various techniques to
			behaviour and apply it in	enhance eco-	knowledge on the	study the animal
			the field.	consciousness for	complexity of life	behaviour in lab and
				sustainable	process, their	in Wild. Analyze the
				development of the	molecular, cellular	various modes of
				society.	and physiological	communication,
					process, their	locomotion foraging
					genetics, evolution,	and Caching.
					behaviour and their	Comprehend the
					interrelationship with	process of learning,
					the environment.	memory, hormonal
						and neural systems.
						Compute the social
						organization and to
						differentiate
						behaviour. Study the
						adverse effects and
						cure for abnormal
						behaviour among the
						Wild domestic and pet
						animals.
B.Sc. Zoology	UGZOA20	NME- Maternal	Help the student to	Emulate positive	Exercise leadership	Comprehend the
	,	and Child	understand the complexity	social values and	qualities and moral	puberty, natal periods
	,	Psychology	of Mother and Child	exercise leadership	values through	and maternal changes.
	,		Psychology.	qualities and team	ethical ways with the	Explain the growth,
				work.	concern for the	developmental stages

					society.	and motor skills Gains insights on the stages of cognitive development and personality. Familiarize different emotions, emotional development and moral development. Identify, classify and differentiate the gifted, mentally retarded and backward
B.Sc. Psychology	UASPA21	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 relating to the concepts in various fields of Psychology.	children. Understand the concepts related to statistics

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

B.Sc.	UCPYN22	Abnormal	To introduce students to	Attain knowledge	Define major	Summaries the
Psychology		psychology II	various disorders related	and understand the	concepts in	concepts ,symptoms
			to mood, psychotic,	principles and	psychology and	and treatments of
			personality and substance	concepts in the	explain the	various disorders
			use disorders	respective discipline.	theoretical	
					perspectives of the	
					fields in Psychology.	
B.Sc.	UCPYO22	Experimental	To provide practical	Acquire and apply	Capability of	Explain the logic of
Psychology		psychology-II	exposure to assess,	analytical, critical	demonstrating	the psychology
			analyse and interpret	and creative thinking,	comprehensive	experiment and
			various psychological	and problem-solving	knowledge of	describe the features
			concepts and to	skills	Psychology and	of experimental
			understand the mental		understanding of one	methodology intended
			status examination.		or more disciplines	to satisfy that logic.
					which form a part of	
					the undergraduate	
					programme of study.	
B.Sc.	UCPYP22	Project	To equip students with	Acquire and apply	Use effective and	To understand and
Psychology			professional competence	analytical, critical	fluent written, oral	apply the learnt
			based on their core	and creative thinking,	and visual	knowledge through
			subjects learnt.	and problem-solving	communication to	practically derived
				skills	convey ideas and	studies,
					concept	

B.Com (B&I)	UAMEA20	Allied III:	Stream based on pricing,	Attain knowledge	Engaging in Lifelong	Understands the
		Managerial	demand and supply	and understand the	Learning, apply	concepts of
		Economics	pattern analysis to develop	principles and	ethical principles and	managerial economics
			the decision making skills	concepts in the	excel as a socially	
				respective discipline.	committed individual	
					having empathy for	
					the needs of the	
					society.	
B.Com (B&I)	UAIBA20	Allied IV:	Understanding the	Effectively	Engaging in Lifelong	Understands various
		International	country level relationship	communicate general	Learning, apply	operations involved in
		Business	and its trade practices in	and discipline-	ethical principles and	International business
			worldwide	specific information,	excel as a socially	
				ideas and opinions.	committed individual	
					having empathy for	
					the needs of the	
					society.	
B.Com (B&I)	UEBIF20	Elective-II B:	Analysis of Marketing	Pursue higher	Engaging in Lifelong	Understands the
		Marketing	mix elements: Price,	knowledge, qualify	Learning, apply	concept of marketing
			product, promotion and	professionally,	ethical principles and	and consumer
			place	enhance	excel as a socially	behavior
				entrepreneurial skills	committed individual	
				and contribute	having empathy for	
				towards the needs of	the needs of the	
				the society.	society.	

B.Com (B&I)	UCBIJ20	Research	Preparing dissertation out	Acquire and apply	Engaging in Lifelong	Understands research
		Methodology	of research carried out in	analytical, critical	Learning, apply	and its procedures
			local place focusing on	and creative thinking,	ethical principles and	
			specific research problem	and problem-solving	excel as a socially	
				skills	committed individual	
					having empathy for	
					the needs of the	
					society	
B.Com (B&I)	UCBIQ20	Financial	Financial management	Attain knowledge	To understand and	To make the students
		Management	strategies is about creating	and understand the	apply the knowledge	conversant with the
			profit for the business and	principles and	of Accounting &	aspects and
			ensuring acceptable return	concepts in the	finance in the	importance of Finance
			on investment in global	respective discipline	domain of	and its management
			level		Commerce, Banking	
					and Insurance.	
B.Com (B&I)	UEBIA20	Elective I A:	Identifying various	Emulate positive	Engaging in Lifelong	understands the
		Marketing in	marketing strategies	social values and	Learning, apply	Concepts of service
		Banking and	towards banking&	exercise leadership	ethical principles and	marketing.
		Insurance	insurance sector	qualities and team	excel as a socially	
				work.	committed individual	
					having empathy for	
					the needs of the	
					society.	

B.B.A (Hospital	UCHAA20	Fundamentals of	To understand the	Attain knowledge	Possess the basic	Understand the
Administration)		Management	evolution and fundamental	and understand the	knowledge and skills	management theories,
			concepts related to	principles and	in managerial	functions and
			business.	concepts in the	domain and	responsibilities of
				respective discipline.	healthcare domain.	managers.
B.B.A (Hospital	UCHAB20	Foundation in	To understand the overall	Attain knowledge	Possess the basic	Understand the
Administration)		Hospital	healthcare systems.	and understand the	knowledge and skills	functions of various
		Administration		principles and	in managerial	healthcare systems
				concepts in the	domain and	and learn relevant
				respective discipline.	healthcare domain.	medical terminology.
B.B.A (Hospital	UCHAD20	Medical	To understand and	Attain knowledge	Possess the basic	Recognize and learn
Administration)		Terminology for	implement right usage of	and understand the	knowledge and skills	the meanings of
		Administration	medical terms.	principles and	in managerial	Standard Medical
				concepts in the	domain and	Abbreviations.
				respective discipline.	healthcare domain.	
B.B.A (Hospital	UEHAB20	Elective I B:	To acquire insight in the	Attain knowledge	Possess the basic	Develop the
Administration)		Logistics and	fundamentals of supply	and understand the	knowledge and skills	conceptual knowledge
		Supply Chain	chain management.	principles and	in managerial	about the process of
		Management		concepts in the	domain and	supply chain and its
				respective discipline.	healthcare domain.	drivers.
B.B.A (Hospital	UAHSM20	Allied IV:	To identify critical issues	Effectively	Demonstrate	Understand the
Administration)		Health services	in service design including	communicate general	managerial	similarities and
		Marketing	the nature of service	and discipline-	knowledge and	differences in service
			products & markets,	specific information,	analytical skills in	based and physical
			building the service model	ideas and opinions.	healthcare sector	product based
			and creating customer		through reflective	marketing activities.
			value.		learning.	

B.B.A (Hospital	UCHAM20	Organizational	To analyze individual and	Emulate positive	Possess the basic	Analyze and compare
Administration)		Behavior	group behavior, and	social values and	knowledge and skills	different theories used
			understand the	exercise leadership	in managerial	to explain individual
			implications of	qualities and team	domain and	behavior.
			organizational behavior on	work.	healthcare domain.	
			the process of			
			management.			
B.B.A (Hospital	UCHAN20	Global	To understand, recognize	Attain knowledge	Possess the basic	Realize the
Administration)		Healthcare	and compare the	and understand the	knowledge and skills	challenges faced by
		System	governance, finance and	principles and	in managerial	hospitals which have
			technology aspects of	concepts in the	domain and	implemented medical
			healthcare systems of	respective discipline.	healthcare domain.	tourism in their
			various countries.			system.
B.B.A (Hospital	UGHAA521	Non Major	To analyze operational	Attain knowledge	Demonstrate	Evaluate operational
Administration)		Elective I:	and tactical information	and understand the	managerial	and tactical
		Management	systems in functional	principles and	knowledge and	information systems
		Information	areas of business.	concepts in the	analytical skills in	in functional areas of
		System		respective discipline.	healthcare sector	business including
					through reflective	marketing, finance
					learning.	and human resource.
B.B.A (Hospital	UCHAQ20	Materials and	To develop, organize and	Attain knowledge	Possess the basic	Recognize the
Administration)		Equipment	implement the materials	and understand the	knowledge and skills	importance of value
		Management	management system in the	principles and	in managerial	and inventory
			hospital.	concepts in the	domain and	management in
				respective discipline.	healthcare domain.	materials management
						and select the
						appropriate methods

					for sustainable
					economic functioning.
Allied Botany	UBBTA20/	Optional Allied	It's a supportive course for	Attain knowledge	Outline the general
	UABTA20	Botany-I/ Allied	the students to excel in life	and understand the	characters, life cycle
		Botany -I	sciences and an allied	principles and	and economic
			course for other major	concepts in the	importance of Algae
			students. They are also	respective discipline.	and Fungi.
			given the knowledge to	Appreciate	Distinguish the
			become agripreneurs.	biodiversity and	general characters of
			Students are enabled to	enhance eco-	Bacteria and Virus
			apply for applied sciences.	consciousness for	Understand the
				sustainable	general characters and
				development of the	life cycle of
				society.	Bryophyta,
					Pteridophyta and
					Gymnosperms.
					Upgrade the
					knowledge in Cell
					biology and Genetics
					Identify the pathogens
					and the applications of
					Plants in agriculture.

Allied Botany	UBBTB20	Optional Allied	It's a supportive course for	Attain knowledge	Classify Angiosperms
	/UABTB20	Botany-II/	the students to excel in life	and understand the	and identify the family
		Allied Botany -	sciences and an allied	principles and	with the characters.
		II	course for other major	concepts in the	Identify and analyse
			students. They are also	respective discipline.	the histology of
			given the knowledge to	Appreciate	Plants. Gain
			become agripreneurs.	biodiversity and	knowledge on
			Students are enabled to	enhance eco-	Embryology of Plants.
			apply for applied sciences.	consciousness for	Understand the key
				sustainable	process of Plant
				development of the	Physiology. Integrate
				society.	the knowledge of
					Horticulture in
					growing Plants.
Allied Botany	UNEVS20	Environmental	Course is designed for	Appreciate	Gain knowledge on
		Studies	students to learn	biodiversity and	multidisciplinary
			biodiversity and to	enhance eco-	nature of
			conserve the environment	consciousness for	environmental studies
			and for their future. They	sustainable	Understand the
			are also exposed to	development of the	Ecosystem, its
			projects on environmental	society.	structure and function
			issues.		Understand the
					conservation of
					biodiversity Gain
					knowledge on
					Environmental
					pollution, causes and

						its effects Apply the
						laws in prevention of
						environment.
Foundation	ULTAA20	Tamil Paper I	To improve Students	To develop students	Learning to read,	Creating social
Course Tamil			Human Rights values and	as human rights	Compassionate and	awareness through
			awareness to Humanity	thinkers and	observe beyond the	literature Inculcation
				humanitarians	classroom	of life values of
						witnesses through
						biography
Foundation	ULTAB20	Tamil Paper II	To Aware to the students	The way of literature	Cultivating the mind	The way of
Course Tamil			religious Harmony	is to develop a sense	of students with	devotional literature is
				of religious harmony	religious ethics to	to promote the spirit
				among the students	love all living beings,	of equality and
					do no harm	brotherhood
Foundation	ULTAC20	Tamil Paper III	Individual behavior to	Nurturing students	To develop students	To lead a moral life
Course Tamil			cultivate via of Sangam	through education to	as moralists to	through moral
			literature to the students	overcome the evils	develop a good	literature
				found in the society	society	
Tamil Paper IV	Foundation	ULTAD20	Tamil Paper IV	To develop students	Creating basic skills	Facilitate self-
	Course			creative thinking and	among students and	sufficiency in life and
	Tamil			Job Oriented skills	creating employment	lead a self-reliant life
				(LSRW)		

Foundation	ULHNA20	Hindi Paper 1	Hindi as an National	Attain knowledge		To appreciate Modern
Course Hindi			language to know the	and understand the		Hindi Poetry
			origin and development of	principles and		
			different literary forms	concepts in the		
				respective discipline.		
Foundation	ULHNB20	Hindi Paper 2	Hindi as an National	Attain knowledge		To enhance critical
Course Hindi			language to know the	and understand the		thinking, imagination,
			origin and development of	principles and		self and social
			different literary forms	concepts in the		awareness through the
				respective discipline.		study of novels and
						poetry
Foundation	ULHNC20	Hindi Paper 3	Hindi as an National	Attain knowledge		Enhance the creative
Course Hindi			language to know the	and understand the		writing skills
			origin and development of	principles and		
			different literary forms	concepts in the		
				respective discipline.		
Foundation	ULHND20	Hindi Paper 4	Hindi as an National	Attain knowledge		To enhance critical
Course Hindi			language to know the	and understand the		thinking, imagination,
			origin and development of	principles and		self and social
			different literary forms	concepts in the		awareness through the
				respective discipline.		study of novels and
						poetry
M.A. English	PCENA20	Chaucer and	The students are	Persist in life-long	Demonstrate wide	CO1 Recall the
		Elizabethan Age	introduced to classic texts	learning for personal	knowledge of literary	historical, social and
			of contemporary	and societal progress.	periods and	biographical Influence
			significance and are also		movements,	
			encouraged to publish		intellectual,	

			research papers		linguistic, religious, and artistic influences Appreciate and discuss varying opinion of literary works	
M.A. English	PCENB20	Restoration literature and Eighteenth century	The students are introduced to classic texts of contemporary significance and are also encouraged to publish research papers	Persist in life-long learning for personal and societal progress.	Demonstrate wide knowledge of literary periods and movements, intellectual, linguistic, religious, and artistic influences Appreciate and discuss varying opinion of literary works	Identify and analyze the writer's perspective, expression and their reflection of life representing the Restoration age
M.A. English	PCENC20	Classical Literature of the World	The students are introduced to classic texts of contemporary significance and are also encouraged to publish research papers	Persist in life-long learning for personal and societal progress.	Demonstrate wide knowledge of literary periods and movements, intellectual, linguistic, religious, and artistic influences	Interpret the best that was known and thought in the world

					Appreciate and discuss varying opinion of literary works	
M.A. English	PCENE20	American Literature	The students are introduced to classic texts of contemporary significance and are also encouraged to publish research papers	Persist in life-long learning for personal and societal progress.	Analyse and interpret Literature using traditional, modern, and contemporary theories and approaches Appreciate and discuss varying opinion of literary works Critically interpret emerging traditions of literature, culture and thought in the canon of new literatures	Interpret American life and Culture against the background of History and Literary development Discuss American Literary artists, who were innovative in their outlook and literary temper.

M.A. English	PCENH20	Women's	The students are	Integrate issues of	Analyse and interpret	Explain diversity of
		Writing	introduced to works from	social relevance in	Literature using	women's experiences
			women writers and are	the field of study.	traditional, modern,	and their varied
			also encouraged to publish		and contemporary	cultural moorings
			research papers		theories and	
					approaches	
					Appreciate and	
					discuss varying	
					opinion of literary	
					works	
					Critically interpret	
					emerging traditions	
					of literature, culture	
					and thought in the	
					canon of new	
					literatures	
M.A. English	PEENC20	Elective- IIA:	The course includes works	Integrate issues of	Analyse and interpret	Trace the aspects of
		Postcolonial	of writers from different	social relevance in	Literature using	subjectivity, race,
		Literature	countries to sensitize	the field of study.	traditional, modern,	class and feminism in
			students on the impact of		and contemporary	the Postcolonial space
			colonization and the		theories and	Understand how
			response to it		approaches	literature shapes ideas
					Appreciate and	about society and
					discuss varying	social identities in
					opinion of literary	interaction with other
					works	discourses such as
					Critically interpret	history and politics

					emerging traditions of literature, culture and thought in the canon of new literatures	Analyse the history of Colonial rule, liberation movements in various nations and develop a critical thinking on the movement of Postcolonialism
M.A. English	PEEND20	Elective- II B: Literature of the Marginalized	The course enables learners to recognize and appreciate socially active writers focusing on the problems of the marginalized from various countries	Integrate issues of social relevance in the field of study.	Analyse and interpret Literature using traditional, modern, and contemporary theories and approaches Appreciate and discuss varying opinion of literary works Critically interpret emerging traditions of literature, culture and thought in the canon of new literatures	Analyze the voice of marginalized recorded in literature from the global and local context with comparative and analytical methodology

M.A. English	PCENI20	Romantic and	The course will enable	Integrate issues of	Analyse and interpret	Explain the nature of
		Victorian	learners to appreciate a	social relevance in	Literature using	Industrial Revolution,
		literature	movement and its	the field of study.	traditional, modern,	the subsequent
			ideology that has been		and contemporary	scientific and material
			influential from its advent		theories and	progress and to
			and is in many ways		approaches	explore a society that
			relevant to the		Appreciate and	was being re-
			contemporary times		discuss varying	organized around
					opinion of literary	Science, Factories and
					works	Business.
					Critically interpret	Connect the works of
					emerging traditions	the Romantics and
					of literature, culture	Victorians to their
					and thought in the	social and historical
					canon of new	backgrounds and
					literatures	evaluate it
M.A. English	PCENJ20	Shakespeare	The course aims at	Integrate issues of	Analyse and interpret	Evaluate
		Studies	inculcating in learners'	social relevance in	Literature using	Shakespeare's
			interest in contemporary	the field of study.	traditional, modern,	contribution to the
			approaches to Shakespeare		and contemporary	English language and
			so as to contribute to		theories and	to the development of
			research on Shakespeare		approaches	the modern drama and
					Appreciate and	recognize various
					discuss varying	theories of literary
					opinion of literary	criticism applied to
					works Critically	Shakespeare's plays
					interpret emerging	

M.A. English	PCENK20	Contemporary critical theory	The course focuses on transforming the learners into researchers familiar with contemporary literary and critical theories facilitating quality research	Develop research skills through multi/inter/trans-disciplinary perspectives.	traditions of literature, culture and thought in the canon of new literatures Analyse and interpret Literature using traditional, modern, and contemporary theories and approaches Appreciate and discuss varying opinion of literary works Critically interpret emerging traditions of literature, culture and thought in the canon of new literatures	Examine various critical theories for their success, drawbacks and influence Analyse critical ideas for an accurate understanding of literary works
M.A. English	PCENL20	Research Methodology	Recent trends in research and relevant methodology is introduced to students through the course	Develop research skills through multi/inter/trans- disciplinary perspectives.	Analyse and interpret Literature using traditional, modern, and contemporary theories and approaches Appreciate and	Identify and contextualize research problems

					discuss varying opinion of literary works Critically interpret emerging traditions of literature, culture and thought in the canon of new literatures	
M.A. English	PEENF20	Elective III A: Translation studies	The course aims at helping students become translators focusing on translating works in English to regional languages	Develop research skills through multi/inter/trans- disciplinary perspectives.	Critically interpret emerging traditions of literature, culture and thought in the canon of new literatures	Appraise the problems of equivalence and loss and gain between the SL and TL texts, leading to comparative evaluation of available versions of translations of a text
MSW	PCSWA20	Introduction to Social Work and Sociology	To gain an understanding of the concepts and the different processes of Social Work with special reference to Indian Society.	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 understand Social Work as a Profession.

MSW	PCSWB20	Social Case	Dealing with individuals	Assimilate and	To enhance the	Effectively
		Work	in solving problem using	apply principles and	individuals to help	understand the scope
			skills and techniques	concept towards skill	themselves with the	of Social Work
				development and	scientific knowledge	
				Employability	about the dynamics	
					of problem and	
					social issues.	
MSW	PCSWC20	Social Group	To acquire knowledge on	Apply critical and	To utilize the	Acquire knowledge,
		Work	Group Dynamics	scientific approaches	available resources	skills and values in
				to address problems	for the empowerment	practicing social work
				and find solutions	of vulnerable groups	with groups through
					and critically analyze	programme planning.
					the problems, needs	
					to create impact in	
					society	
MSW	PESWA20	Social Problems	Develops an	Apply critical and	It brings a change in	Analyze social
			understanding about	scientific approaches	attitudes and values	problems and
			various social problems,	to address problems	of individual	highlight the
I			helps to find out the	and find solutions.	irrespective of their	significance of social
			problems of weaker		class, caste or	work intervention in
			sections and educate the		gender.	the Indian context.
			students about various			
			social problems from			
			various cultural			
			backgrounds			

MSW	PISWA20 -	Disaster	To enhance the awareness	Integrate issues of	Apply the knowledge	Develop skills to
	IEC	Management	of institutional process in	social relevance in	of social work in the	analyze the factors
			disasters.	the field of study.	domain of	leading to disaster
					community	
					development, human	
					resource	
					management,	
					medical and	
					psychiatric	
					rehabilitation.	
MSW	PCSWD20	Concurrent	To analyse the social	Apply critical and	To prepare the	Understand the role of
		Field Work-I	system and its impact on	scientific approaches	individual in	a Social Worker in an
			individuals, groups,	to address problems	understanding the	agency and in the
			family, community and	and find solutions	human behaviour	community.
			understand the role and		with the relation to	
			functioning of		society	
			organisation. Government			
			and Non-Governmental.			
MSW	PCSWE20	Human Growth	Helps to equip the	Assimilate and	To prepare the	Explore the concept
		and Personality	students of social work	apply principles and	individual in	of social psychology
		Development	with understanding of	concept towards skill	understanding the	and application of
			human behaviour and	development and	human behaviour	psychological tests.
			personality development	Employability	with the relation to	
			models, and to introduce		society	
			the students to various			
			field of psychology.			

MSW	PCSWF20	Social Work	To develop the capacity to	Apply critical and	Apply the knowledge	Provide clear plan of
		Research	independently	scientific approaches	of social work in the	the research and
			conceptualize a problem	to address problems	domain of	understand framework
			and execute research.	and find solutions.	community	of research methods
					development, human	and techniques
					resource	through research
					management,	design.
					medical and	
					psychiatric	
					rehabilitation.	
MSW	PCSWG20	Community	To develop an	Integrate issues of	To utilize the	Able to demonstrate
		Organisation	understanding of the	social relevance in	opportunity and of	familiarity with
		and Social	concepts related to	the field of study.	professionalism in	Community
		Action	working with		the development	Organisation and
			communities.		process	Social Action as
						method of Social
						Work Profession.
MSW	PNHRA22	Human Rights	To sensitize students for	Persist in life-long	It brings a change in	To strengthen the
			the application of Human	learning for personal	attitudes and values	promotion and
			Rights to the various	and societal progress	of individual	protection of human
			practice domains of the		irrespective of their	rights around the
			different profession		class, caste or	globe
					gender.	

MSW	PSHRB20	Human	Acquire knowledge on	Persist in life-long	It brings a change in	Acquire and build
		Resource	various functions of	learning for personal	attitudes and values	appropriate
		Management	Human Resource	and societal progress	of individual	knowledge based on
			Management		respective of their	Human Resource
					class, caste or gender	Management
MSW	PESWE20	Project	To understand the	Develop research	To enhance the	Develop and support
		Formulation	strategies and techniques	skills through	individuals to help	the basic concepts and
			involved in project	multi/inter/trans-	themselves with the	nature of the project
			formulation.	disciplinary	scientific knowledge	proposal support to
				perspectives.	about the dynamics	strengthen the
					of problem and	individual support to
					social issues.	work with research.
MSW	PISWC20	Counselling	To develop a basic	Persist in life-long	To utilize the	Understand linkages
			understanding of theories	learning for personal	opportunity and of	of counselling and
			and skills in counselling.	and societal progress	professionalism in	guidance in social
					the development	work.
					process	
MSW	PSCDD20	Entrepreneurshi	Course designed to	Persist in life-long	To prepare the	Apply social
		p Development	develop entrepreneurial	learning for personal	individual in	entrepreneurship to
			skills to craft innovative	and societal progress	understanding the	both profit and non
			responses to social		human behaviour	profit firms to create
			problems		with the relation to	social value
					society	

MSW	PSHRD20	Organizational Behaviour	To present a new perspective for management	Develop research skills through multi/inter/transdisciplinary perspectives.	To utilize the opportunity and of professionalism in the development process	Analyze individual and group behaviour and understand the implication of organizational behaviour on the process of management
MSW	PESWG20	Administration of Service Organization	To encourage students to apply administration process into practice.	Apply critical and scientific approaches to address problems and find solutions.	To utilize the opportunity and of professionalism in the development process	Application of administration process in service organization.
MSW	PISWD20	Social work profession in different settings	To develop an understanding of social work practice in various settings	Develop research skills through multi/inter/trans- disciplinary perspectives.	To utilize the opportunity and of professionalism in the development process	Able to understand the problem faced by professional social worker
MBA	PCBAC20	Economics For Management	To acquire the familiarity with the elements of production required in the current corporate scenario	Develop research skills through multi/inter/trans- disciplinary perspectives.	Students develop self-learning skills, and remain updated on contemporary management practices and can leverage their learning to provide solutions to business	Understand the assumption of pricing and Market competition

					problems.	
MBA	PCBAF20	Management	To implement the	Integrate issues of	Students develop	Be able to classify the
		Information	conceptual and practical	social relevance in	self-learning skills,	different functional
		System And	management concepts	the field of study.	and remain updated	business systems
		Technology	using information system		on contemporary	using information
			and technology in the		management	system and
			workplace.		practices and can	technology and can
					leverage their	implement in their
					learning to provide	organization.
					solutions to business	
					problems.	
MBA	PCBAG20	Supply Chain	To learn about the latest	Integrate issues of	Students can	Elaborate the current
		Management	trends in technology.	social relevance in	objectively research	trends and
				the field of study.	on business and	technological
					management	implementation in the
					problems by	supply chain
					collecting, analysing,	environment.
					and interpreting the	
					data and	
					professionally	
					recommend feasible	
					solution/s.	
MBA	PCBAO20	Production And	To understand the concept	Integrate issues of	Students can	Appreciate the
		Operations	and techniques of	social relevance in	objectively research	principles and
		Management	production and operations	the field of study.	on business and	applications relevant
			management		management	to the production and
					problems by	operation systems of

MBA	PCBAP20	International Business And Ethics	To Develop Knowledge on Business Strategies and Culture in International Aspect and Familiarize the Learners with the	Develop research skills through multi/inter/transdisciplinary	collecting, analysing, and interpreting the data and professionally recommend feasible solution/s. Students can objectively research on business and management problems by	manufacturing/service firms. Understand the emergence and needs of Globalization in Business and acquire
			International Trade and Business.	perspectives.	problems by collecting, analysing, and interpreting the data and professionally recommend feasible solution/s.	the concepts of International Business theories and Strategies.
MBA	PIBAB20	Disaster Management	To gain knowledge about the concept of disaster	Develop research skills through multi/inter/transdisciplinary perspectives.	Students can objectively research on business and management problems by collecting, analysing, and interpreting the data and professionally recommend feasible	Understand the knowledge about the concept of Disaster

					solution/s.	
MBA	PIBAI20	Travel And	To educate the learners on	Develop research	Students can	Be educated the on
		Tourism	Tourists Conduct and	skills through	objectively research	Tourists Conduct
		Management	Motives	multi/inter/trans-	on business and	Motives and behavior
				disciplinary	management	
				perspectives.	problems by	
					collecting, analysing,	
					and interpreting the	
					data and	
					professionally	
					recommend feasible	
					solution/s.	
MBA	PIBAJ20	Cyber Security	To implement the	Develop research	Students can	Analyze application
		And Laws	conceptual and practical	skills through	objectively research	securities enable
			cyber security knowledge	multi/inter/trans-	on business and	students to understand
			in the workplace	disciplinary	management	the type of hackers
				perspectives.	problems by	and the techniques
					collecting, analysing,	
					and interpreting the	
					data and	
					professionally	
					recommend feasible	
					solution/s.	

MBA	PIBAK20	Management Of	To comprehend the origin	Develop research	Students can	Understand
		Multi National	and development of	skills through	objectively research	international
		Corporation	MNC's.	multi/inter/trans-	on business and	management with
				disciplinary	management	various schools of
				perspectives.	problems by	thoughts along with
					collecting, analysing,	the problems faced by
					and interpreting the	host countries.
					data and	
					professionally	
					recommend feasible	
					solution/s.	
MBA	PEMKA20	Retail	To introduce the student to	Assimilate and apply	At the end of the	Be provided with a
		Marketing	the role of retailing and	principles and	course the students	comprehensive view
			rural retailing in the	concepts towards	shall be able to	of retailing and rural
			distribution component	skill development	conceptualize,	marketing in the
				and employability.	critically analyse,	distribution
					provide solutions to	component.
					problems challenging	
					real-life situations,	
					gain practical	
					exposure in Business	
					and Management.	
MBA	PELMA20	Logistics	Enhance and develop the	Integrate issues of	Students develop	Analyze the strengths
		Management	skills on international	social relevance in	self-learning skills,	and weaknesses of
			logistics functions.	the field of study.	and remain updated	packing and the
					on contemporary	emerging trends in the
					management	same.

					practices and can leverage their learning to provide solutions to business problems.	
MBA	PELMB20	Export and Import Management	To know all the in depth functionalities of Air 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.	Elaborate the procedures of Air Carriers.
MBA	PESSA20	Cloud Computing	To enable the evolution and role of Cloud Computing in business integration.	Develop research skills through multi/inter/transdisciplinary 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 jobrelated problems.	Understand how Cloud is evolved and will come out with good conceptual knowledge in Cloud Computing

MBA	PESSB20	Digital Business	To gain domain	Assimilate and apply	At the end of the	Understand the
		And E	knowledge in all aspects	principles and	course the students	concepts of E-
		Commerce	of Digital and E-	concepts towards	shall be able to	marketing and Digital
			Commerce environment.	skill development	conceptualize,	payment
				and employability.	critically analyse,	
					provide solutions to	
					problems challenging	
					real-life situations,	
					gain practical	
					exposure in Business	
					and Management.	
MBA	PESSC20	Decision	To gain domain	Integrate issues of	Students develop	Enable the student to
		Support And	knowledge in all aspects	social relevance in	self-learning skills,	understand about
		Business	of Decision Support	the field of study.	and remain updated	decision support
		Intelligence	system and Business		on contemporary	systems
			Intelligence		management	
					practices and can	
					leverage their	
					learning to provide	
					solutions to business	
					problems.	
MBA	PEFNC20	Risk	The students will learn the	Integrate issues of	The students can	Acquire knowledge
		Management	fundamental concepts of	social relevance in	function effectively	and skills in the
		And Derivatives	derivative pricing and	the field of study.	as an individual and	advanced financial
			hedging and apply them to		in a group with the	derivatives
			a variety of financial		capacity to be a team	
			instruments.		leader, as an	

					entrepreneur, and administrator.	
MBA	PELMC20	Green Supply Chain and Logistics Management	To provide foundational knowledge associated with the green supply chain.	Integrate issues of social relevance in the field of study.	Students gain the ability to synthesize knowledge with skills in the areas of Business and Management and can provide innovative and entrepreneurial	Understand the concepts in green manufacturing and its challenges.
					solutions to job- related problems.	
M.Com	PCCOC20	Organizational Behaviour	To provide the students a basic knowledge on the dynamics of individual and group behaviour for efficient and effective utilization of human resources in organisations	Persist in life-long learning for personal and societal progress.	Integrate cognitive and analytical skills to manage financial aspects of Business and Banks.	Understand the concepts of organizational behavior.
M.Com	PECOB20	Customer Relationship Management	The objective of the course is to enable the students to get familiarized with the existing Company Law and Secretarial Procedure	Persist in life-long learning for personal and societal progress.	Possess professional skills for employment and lifelong learning in Commerce and become successful entrepreneurs and professionals	Gain knowledge of customer relationship and its management

M.Com	PCCOH20	Bank Financial	To impart knowledge to	Assimilate and apply	Integrate cognitive	To demonstrate on
		Management	the students on the	principles and	and analytical skills	correspondent banking
			Financial Management	concepts towards	to manage financial	system and its
			techniques applied by	skill development	aspects of Business	functions
			banks	and employability.	and Banks.	
M.Com	PECOC20	International	To enable the students to	Assimilate and apply	Possess professional	To understand the
		Marketing	learn the procedures and	principles and	skills for	concepts and
		Management	strategies in International	concepts towards	employment and	approaches of
			Marketing, Foreign	skill development	lifelong learning in	international
			Exchange regulations and	and employability.	Commerce and	marketing
			Documentation for		become successful	
			exporting		entrepreneurs and	
					professionals	
M.Com	PECOD20	Management of	To provide adequate	Assimilate and apply	Integrate cognitive	Gain knowledge of the
		Financial	knowledge about wide	principles and	and analytical skills	basics of derivatives
		Derivatives	range of financial	concepts towards	to manage financial	and instruments
			derivatives having pivotal	skill development	aspects of Business	involved in the same
			role in enhancing	and employability.	and Banks.	
			shareholders' value by			
			ensuring access to the			
			cheapest source of funds.			
M.Com	PCCOJ20	Services	To make the students	Persist in life-long	Possess professional	To understand the
		Marketing	aware of the basic	learning for personal	skills for	concept of services
			concepts of various	and societal progress.	employment and	marketing and
			Services and their		lifelong learning in	services sectors in
			Marketing aspects		Commerce and	India
					Become successful	

					entrepreneurs and professionals in the field of Banking, Auditing and Accounting, Insurance, Manufacturing industries and finance.	
M.Com	PICOC20	Total Quality Management	To introduce to the students the concept of Quality and Total Quality Management in Organisations and teach about the various quality standards to be adopted in various businesses	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.	Understand the concept of Quality Control and the procedures for implementing quality
M.Sc. Biochemistry	PCBCA20	Biomolecules	To understand the salient features of biomolecules in the organization of life.	Integrate issues of social relevance in the field of study.	Evaluate ideas and evidence rationally to produce and implement solution to the socially relevant problem	Gain knowledge on the structure, different forms and significance of lipids in the system

M.Sc.	PCBCB20	Human	To study about the	Integrate issues of	Evaluate ideas and	Explain the
Biochemistry		Physiology and	Physiological system of	social relevance in	evidence rationally to	physiology of muscle
		Nutrition	human body and Nutrients	the field of study.	produce and	and neurotransmitters
			with their deficiencies.		implement solution	
					to the socially	
					relevant problem	
M.Sc.	PCBCC20	Cell Biology	To understand the Cell,	Integrate issues of	Evaluate ideas and	Discuss about the
Biochemistry			Cell organelles structure,	social relevance in	evidence rationally to	various sub-cellular
			function and metabolism	the field of study.	produce and	components of cells
					implement solution	and its functions in the
					to the socially	biological system
					relevant problem	
M.Sc.	PCBCG20	Practical I: Main	To help students to	Integrate issues of	Evaluate ideas and	Discuss qualitative
Biochemistry		Practical-I	expertise in the	social relevance in	evidence rationally to	and quantitative
			Biomolecules, Cell	the field of study.	produce and	analysis of various
			Dynamics and		implement solution	biomolecules
			biochemical techniques.		to the socially	
					relevant problem	
M.Sc.	PCBCH20	Practical II:	To learn about the	Integrate issues of	Evaluate ideas and	.Identify and purify
Biochemistry		Main Practical-	analytical techniques and	social relevance in	evidence rationally to	biomolecules in a
		II	enzymology experiments.	the field of study.	produce and	mixture by
					implement solution	chromatographic
					to the socially	technique
					relevant problem	

M.Sc.	PEBCA20	Elective IA:	To make the students to	Integrate issues of	Evaluate ideas and	Classify organic
Biochemistry		Biophysical	understand the concepts of	social relevance in	evidence rationally to	molecules by their
		Chemistry	bioenergetics and	the field of study.	produce and	functional groups
			techniques.		implement solution	
					to the socially	
					relevant problem	
M.Sc.	PEBCB20	Elective IB:	To make the students	Integrate issues of	Evaluate ideas and	Explain the use of
Biochemistry		Pharmaceutical	aware of uses and abuse of	social relevance in	evidence rationally to	genetically engineered
		Biochemistry	drugs.	the field of study.	produce and	methods on novel
					implement solution	drug delivery systems
					to the socially	
					relevant problem	
M.Sc.	PCBCD20	Analytical	To understand the	Integrate issues of	Evaluate ideas and	Pursue knowledge
Biochemistry		Biochemistry	principles and applications	social relevance in	evidence rationally to	about centrifugation
			of analytical techniques.	the field of study.	produce and	and radioactivity and
					implement solution	critically assess
					to the socially	advances with in the
					relevant problem	field
M.Sc.	PCBCE20	Enzymology	To learn the methodology	Integrate issues of	Evaluate ideas and	List the enzyme
Biochemistry			involved in assessing the	social relevance in	evidence rationally to	properties,
			enzyme activity and	the field of study.	produce and	nomenclature and
			mechanism of enzyme		implement solution	purification of
			action.		to the socially	enzymes
					relevant problem	

M.Sc.	PCBCF20	Intermediary	To make the students to	Integrate issues of	Evaluate ideas and	Analyze complex
Biochemistry		Metabolism	understand the reactions	social relevance in	evidence rationally to	chemical reactions
			catalyzed by different	the field of study.	produce and	and draw logical
			enzymes and their		implement solution	conclusion by
			metabolic pathways.		to the socially	interrelating
					relevant problem	metabolism
M.Sc.	PEBCC20	Elective IIA:	The course enables the	Integrate issues of	Evaluate ideas and	Apply the concept of
Biochemistry		Ecology,	students to understand and	social relevance in	evidence rationally to	evolution in
		Evolution and	analyze the role of	the field of study.	produce and	population genetics
		Developmental	ecological and		implement solution	
		Biology	evolutionary		to the socially	
			modifications in the		relevant problem	
			development of organisms			
			and their survival.			
M.Sc.	PEBCD20	Elective II B:	The course gives a	Integrate issues of	Evaluate ideas and	Discuss the effects of
Biochemistry		Toxicology	detailed understanding and	social relevance in	evidence rationally to	toxic substances on
			identification of toxic	the field of study.	produce and	molecular and cellular
			substances, dose-response,		implement solution	levels
			tests conducted and its		to the socially	
			impact on cellular		relevant problem	
			activities.			
M.Sc.	PCBCI20	Advanced	The course describes in	Integrate issues of	: Evaluate ideas and	Identify the structure
Biochemistry		Endocrinology	detail about the role of	social relevance in	evidence rationally to	and functions of
			endocrine glands, their	the field of study.	produce and	endocrine glands and
			secretion, its metabolic		implement solution	hormones
			effect on target cells		to the socially	
			involving various		relevant problem	

			signaling pathways and			
MCa	DCDC120	A dropped	signal chain proteins.	Into anota issues of	Evoluate ideas and	Discuss the masses for
M.Sc.	PCBCJ20	Advanced	To help the students to	Integrate issues of	Evaluate ideas and	Discuss the reason for
Biochemistry		Immunology	understand the	social relevance in	evidence rationally to	different vaccination
			components of immune	the field of study.	produce and	
			system and it's		implement solution	
			functioning.		to the socially	
					relevant problem	
M.Sc.	PCBCK20	Advanced	To learn how to apply the	Integrate issues of	Evaluate ideas and	Apply the knowledge
Biochemistry		Biotechnology	knowledge of genetic	social relevance in	evidence rationally to	of genetic engineering
			engineering in problem	the field of study.	produce and	in problem solving
			solving and in practice.		implement solution	and in practice
					to the socially	
					relevant problem	
M.Sc.	PCBCN20	Practical II:	The course is aimed to	Integrate issues of	Evaluate ideas and	Analyse the
Biochemistry		Main Practical	enable the student	social relevance in	evidence rationally to	prevalence and impact
		III	interpret hormonal	the field of study.	produce and	of endocrine hormone
			imbalance and clinical		implement solution	in regulating health
			conditions and also to		to the socially	
			provide in-depth practical		relevant problem	
			knowledge and skill in		-	
			performing immune-			
			techniques and cell culture			
			techniques.			

M.Sc.	PCBCO20	Practical II:	To help students to	Integrate issues of	Evaluate ideas and	Utilize practical
Biochemistry		Main Practical -	expertise in the molecular	social relevance in	evidence rationally to	knowledge and skill
		IV	biology and clinical	the field of study.	produce and	for diagnosing various
			biochemistry techniques.		implement solution	diseases using
					to the socially	biochemical analysis
					relevant problem	in blood specimen
M.Sc.	PEBCE20	Elective III A:	To understand the	Integrate issues of	Evaluate ideas and	Identify the various
Biochemistry		Microbiology	importance of applications	social relevance in	evidence rationally to	infectious diseases, its
			of microorganisms.	the field of study.	produce and	causative agents and
					implement solution	antimicrobial drugs
					to the socially	
					relevant problem	
M.Sc.	PEBCF20	Elective III B:	To addresses the issues	Integrate issues of	Evaluate ideas and	Understand the
Biochemistry		Research	inherent in selecting a	social relevance in	evidence rationally to	significance of
		Methodology	research problem and	the field of study.	produce and	internet in research
			discuss the techniques and		implement solution	
			tools to be employed in		to the socially	
			completing a research		relevant problem	
			project			
M.Sc.	PCBCL20	Molecular	The course will enable the	Integrate issues of	Evaluate ideas and	Describe the blueprint
Biochemistry		Biology	student to learn the	social relevance in	evidence rationally to	of life and its
			molecular events	the field of study.	produce and	functions
			occurring in gene and its		implement solution	
			application in field of		to the socially	
			biomedical and genetic		relevant problem	
			research.			

M.Sc.	PCBCM20	Advanced	To gain concepts of	Integrate issues of	Evaluate ideas and	Compare the liver
Biochemistry		Clinical	assessing the human	social relevance in	evidence rationally to	and renal disorders
		Biochemistry	physiology using	the field of study.	produce and	
			biological fluid.		implement solution	
					to the socially	
					relevant problem	
M.Sc.	PEBCG20	Elective IVA:	To help the students to	Integrate issues of	Evaluate ideas and	Discuss the function
Biochemistry		Plant	understand the plant	social relevance in	evidence rationally to	and composition of
		Biochemistry	metabolites and their	the field of study.	produce and	different plant
			application in the field of		implement solution	structures
			medicine.		to the socially	
					relevant problem	
M.Sc.	PEBCH20	Elective IV B:	To help students to	Integrate issues of	Evaluate ideas and	Describe the concepts
Biochemistry		Herbal Therapy	understand the concepts in	social relevance in	evidence rationally to	of Pharmacognosy
			pharmacognosy and the	the field of study.	produce and	
			role of medicinal plants.		implement solution	
					to the socially	
					relevant problem	
M.Sc.	PIBCA20	IEC: Organic	To help students to	Integrate issues of	Evaluate ideas and	Apply the concept of
Biochemistry		Farming	understand the concepts	social relevance in	evidence rationally to	organic farming
			and importance of organic	the field of study.	produce and	
			farming and use it as a		implement solution	
			source of income		to the socially	
			generation		relevant problem	

M.Sc.	PIBCB20	IEC: Food	To enable students to	Integrate issues of	Evaluate ideas and	Find the methods of
Biochemistry		Preservation	understand the concepts of	social relevance in	evidence rationally to	food preservation
			food preservation and	the field of study.	produce and	
			methods involved		implement solution	
					to the socially	
					relevant problem	
M.Sc.	PIBCC20	IEC:	To emphasis on the	Integrate issues of	Evaluate ideas and	Gain knowledge on
Biochemistry		Horticulture	significance and concepts	social relevance in	evidence rationally to	cropping techniques
			of horticulture and the	the field of study.	produce and	and harvesting
			techniques involved.		implement solution	methods
					to the socially	
					relevant problem	
M.Sc.	PIBCD20	IEC: Cancer	To help students to	Integrate issues of	Evaluate ideas and	Examine the basic
Biochemistry		Biology	understand the biology,	social relevance in	evidence rationally to	concepts of clinical
			diagnosis and treatment	the field of study.	produce and	research in oncology
			involved in cancer.		implement solution	
					to the socially	
					relevant problem	
M.Sc.	PIBCE20	IEC:	The course aims to	Integrate issues of	Evaluate ideas and	Outline the
Biochemistry		Nanobiotechnol	provide an	social relevance in	evidence rationally to	prospective of Nano
		ogy	interdisciplinary	the field of study.	produce and	biology and Nano
			knowledge on Nano		implement solution	sensors
			materials and their		to the socially	
			applications in		relevant problem	
			biosciences.			

M.Sc.	PIBCF20	IEC: Stem cell	The course gives in depth	Integrate issues of	Evaluate ideas and	Use hematopoietic
Biochemistry		Technology	knowledge on stem cell	social relevance in	evidence rationally to	stem cells in treating
			biology, regulation of	the field of study.	produce and	blood related
			stem cell differentiation,		implement solution	disorders and diseases
			tools to study and its		to the socially	
			utilization in treating		relevant problem	
			various disorders			
M.Sc.	PIBCG20	IEC:	The course is aimed to	Integrate issues of	: Evaluate ideas and	Critically evaluate the
Biochemistry		Psychology	enhance the psychological	social relevance in	evidence rationally to	fundamental processes
			skills for the students to	the field of study.	produce and	underlying human
			acquire factual knowledge		implement solution	behavior.
			and ability to		to the socially	
			conceptualize and apply in		relevant problem	
			their life.			
M.Sc.	PIBCH20	IEC:	The course provides	Integrate issues of	Evaluate ideas and	Identify and
Biochemistry		Entrepreneurial	detailed knowledge on	social relevance in	evidence rationally to	implement the role of
		Biochemistry	ideas, opportunities and	the field of study.	produce and	entrepreneur towards
			components necessary for		implement solution	society.
			bio-entrepreneurship.		to the socially	
					relevant problem	
M.Sc. Chemistry	PCCHA20	Stereo	The courses are designed	Attain an in-depth	Attain an in-depth	Assign the
		Chemistry and	to meet the global	knowledge in the	knowledge on	configuration of
		Conformational	requirements and enables	respective domains	advanced concepts in	stereoisomers
		Analysis	students to pursue higher	augmented through	various branches of	including those with
			education in the	self- learning.	chemistry augmented	no stereogenic carbon
			institutions abroad as well	Assimilate and apply	through self-learning,	centre and classify the
			as employment	principles and	persist in life-long	stereospecific and

opportunities outside the	concepts towards	learning for personal	stereoselective
country.	skill development	and societal progress.	reactions.
eodnay.	and employability.	Assimilate and apply	Compare the relative
	and employability.	principles and	stability and reactivity
			of conformational
		concepts towards	
		skill development,	isomers of
		employability,	cyclohexane and
		critical and scientific	related compounds.
		approaches to	Ascertain the
		address the problems	knowledge on the
		and find solutions.	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.

M.Sc. Chemistry	PCCHB20	Structural	The courses are designed	Attain an in-depth	Attain an in-depth	Summarize the
		Inorganic	to meet the global	knowledge in the	knowledge on	theories of acids and
		Chemistry	requirements and enables	respective domains	advanced concepts in	bases.Discuss
			students to pursue higher	augmented through	various branches of	conductors,
			education in the	self- learning.	chemistry augmented	semiconductors and
			institutions abroad as well	Assimilate and apply	through self-learning,	insulators based on
			as employment	principles and	persist in life-long	band theory. Assess
			opportunities outside the	concepts towards	learning for personal	the structure and
			country.	skill development	and societal progress.	bonding in different
				and employability.	Assimilate and apply	types of ionic solids,
					principles and	metals and
					concepts towards	alloys.Discuss the
					skill development,	structure and bonding
					employability,	in polyacids, silicates
					critical and scientific	and inorganic
					approaches to	polymers. Distinguish
					address the problems	the structure and
					and find solutions.	bonding in boranes,
						carborne, metallo
						carborne, boron
						nitrides and metal
						clusters.

M.Sc. Chemistry	PCCHC20	Kinetics and	The courses are designed	Attain an in-depth	Attain an in-depth	Describe Activated
		Photo Chemistry	to meet the global	knowledge in the	knowledge on	Complex Theory in
			requirements and enables	respective domains	advanced concepts in	terms of translational
			students to pursue higher	augmented through	various branches of	and vibrational
			education in the	self- learning.	chemistry augmented	partition functions and
			institutions abroad as well	Assimilate and apply	through self-learning,	apply it to derive the
			as employment	principles and	persist in life-long	kinetics of reactions in
			opportunities outside the	concepts towards	learning for personal	solutions, Hammett
			country.	skill development	and societal progress.	and Taft equations and
				and employability.	Assimilate and apply	kinetic isotope effects
					principles and	in studying the
					concepts towards	mechanism of
					skill development,	chemical reactions.
					employability,	Discuss the concepts
					critical and scientific	and kinetics of
					approaches to	homogeneous and
					address the problems	heterogeneous
					and find solutions.	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

M.Sc. Chemistry

M.C. Chamist	DECHESO	Elective I D		Attain on in Jardh	address the problems and find solutions.	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	The courses are designed to meet the global requirements and enables students to pursue higher education in the institutions abroad as well as employment opportunities outside the country.	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	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 nanomaterials. Explain the

					address the problems	applications of nano
					and find solutions.	chemistry in optics,
						electronics, and
						sensors.
						Outline the
						biomedical application
						of nanoparticles.
M.Sc. Chemistry	PCCHD20	Organic	The courses are designed	Attain an in-depth	Attain an in-depth	Discuss the oxidation
		Reactions and	to meet the global	knowledge in the	knowledge on	of organic compounds
		Mechanisms	requirements and enables	respective domains	advanced concepts in	using selected
			students to pursue higher	augmented through	various branches of	oxidizing reagents.
			education in the	self- learning.	chemistry augmented	Discuss the reduction
			institutions abroad as well	Assimilate and apply	through self-learning,	of organic compounds
			as employment	principles and	persist in life-long	using selected
			opportunities outside the	concepts towards	learning for personal	reducing reagents.
			country.	skill development	and societal progress.	Describe the
				and employability.	Assimilate and apply	mechanisms of
					principles and	various rearrangement
					concepts towards	reactions and their
					skill development,	applications.
					employability,	Explain the reaction
					critical and scientific	mechanisms and
					approaches to	applications of
					address the problems	selected named
					and find solutions.	reactions.
						Illustrate the types of
						photo chemical

M.Sc. Chemistry	PCCHE20	Advanced Coordination Chemistry	The courses are designed to meet the global requirements and enables students to pursue higher education in the institutions abroad as well as employment opportunities outside the country.	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.	reactions, classify pericyclic reactions, and examine the correlation diagram for butadiene-cyclobutene system. 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
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M.Sc. Chemistry	PCCHF20	Group Theory and Quantum Chemistry	The courses are designed to meet the global requirements and enables students to pursue higher education in the institutions abroad as well as employment opportunities outside the country.	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.	and mechanisms of square planar and octahedral complexes and appraise the applications of complexes in various fields. Identify symmetry operations and assign point groups of molecules. Construct the character tables for C2v and C3v 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-
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						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 theory to di and
						polyatomic molecules,
						explain the application
						of HMO theory to
						ethylene, butadiene,
						and benzene.
M.Sc. Chemistry	PECHC20	Elective IIA:	The courses are designed	Attain an in-depth	Attain an in-depth	Classify the
		Pharmaceutical	to meet the global	knowledge in the	knowledge on	pharmaceutical drugs
		Chemistry	requirements and enables	respective domains	advanced concepts in	and explain the
		-	students to pursue higher	augmented through	various branches of	mechanism of drug
			education in the	self- learning.	chemistry augmented	action and absorption

institutions abroad as well	Assimilate and apply	through self-learning	of drugs.
			Elaborate the
		=	
	-		biological role of
country.		= =	important inorganic
	and employability.		compounds and the
		principles and	drugs used in the
		concepts towards	treatment of mental
		skill development,	disorders.
		employability,	Summarize the
		critical and scientific	methods of drug
		approaches to	design and
		address the problems	development.
		and find solutions.	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
			disorder.
	institutions abroad as well as employment opportunities outside the country.	as employment principles and opportunities outside the concepts towards	as employment opportunities outside the country. principles and concepts towards skill development and societal progress. Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems

M.Sc. Chemistry	PECHD20	Elective IIB:	The courses are designed	Attain an in-depth	Attain an in-depth	Explain the designing
		Medicinal	to meet the global	knowledge in the	knowledge on	of drugs by different
		Chemistry	requirements and enables	respective domains	advanced concepts in	approaches.
			students to pursue higher	augmented through	various branches of	Define the
			education in the	self- learning.	chemistry augmented	physiochemical
			institutions abroad as well	Assimilate and apply	through self-learning,	properties of drug
			as employment	principles and	persist in life-long	molecules, and
			opportunities outside the	concepts towards	learning for personal	illustrate
			country.	skill development	and societal progress.	pharmacophore,
				and employability.	Assimilate and apply	toxicophoric,
					principles and	melanophore and
					concepts towards	interchangeable bio
					skill development,	isosteres.
					employability,	Describe the nature of
					critical and scientific	drug receptors and
					approaches to	their binding
					address the problems	interactions.
					and find solutions.	Explain the
						stereochemical
						properties and
						biological activity of
						drug molecules, and to
						identify the properties
						of drug molecules by
						quantum mechanics
						and molecular
						mechanics.

M.Sc. Chemistry	PCCHG20	Practical I:	The courses are designed	Attain an in-depth	Attain an in-depth	Describe the physiological and pathological approaches while designing newer drugs for newer diseases, and to Discuss the biological activity of steroids and radioisotopes. Identify the
M.Sc. Chemistry	PCCHG20	Organic Chemistry I	to meet the global requirements and enables students to pursue higher education in the institutions abroad as well as employment opportunities outside the country.	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/transdisciplinary 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. Demonstrate an ability to conduct experiments and perform accurate quantitative measurements with an understanding of the theory and	components in two component mixture and detect the functional groups. Prepare the organic compounds and purify them. Perform common laboratory techniques like separation, refluxing, recrystallization, vacuum filtration, and sublimation.

					darratan musetteet	
					develop practical	
					skills in handling	
					analytical	
					instruments.:	
					Interpret	
					experimental results,	
					perform calculations	
					on these results and	
					draw reasonable,	
					accurate conclusions.	
					Assimilate and	
					apply principles and	
					concepts towards	
					skill development,	
					employability,	
					critical and scientific	
					approaches to	
					address the problems	
					and find solutions.	
M.Sc. Chemistry	PCCHH20	Practical II:	The courses are designed	Attain an in-depth	Attain an in-depth	Demonstrate group
		Inorganic	to meet the global	knowledge in the	knowledge on	separation and
		Chemistry I	requirements and enables	respective domains	advanced concepts in	analysis of inorganic
			students to pursue higher	augmented through	various branches of	mixtures.Identify rare
			education in the	self- learning.	chemistry augmented	and common ions
			institutions abroad as well	Apply critical and	through self-learning,	present in the
			as employment	scientific approaches	persist in life-long	inorganic
			opportunities outside the	to address problems	learning for personal	mixtures.Prepare
			opportunities outside the	to address problems	rearring for personal	IIIIII Con Topulo

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country.	and find solutions.	and societal progress.	selected inorganic
	Develop research	Demonstrate an	complexes.Estimate
	skills through	ability to conduct	the metal ions present
	multi/inter/trans-	experiments and	in the sample by
	disciplinary	perform accurate	colorimetric method.
	perspectives.	quantitative	
		measurements with	
		an understanding of	
		the theory and	
		develop practical	
		skills in handling	
		analytical	
		instruments.	
		Interpret	
		experimental results,	
		perform calculations	
		on these results and	
		draw reasonable,	
		accurate conclusions.	
		Assimilate and apply	
		principles and	
		concepts towards	
		skill development,	
		employability,	
		critical and scientific	
		approaches to	
		address the problems	

					and find solutions.	
M.Sc. Chemistry	PCCHI20	Practical III:	The courses are designed	Attain an in-depth	Attain an in-depth	Prepare the solutions
		Physical	to meet the global	knowledge in the	knowledge on	of different
		Chemistry I	requirements and enables	respective domains	advanced concepts in	concentrations.
			students to pursue higher	augmented through	various branches of	Experiment and
			education in the	self- learning.	chemistry augmented	calculate the rate
			institutions abroad as well	Apply critical and	through self-learning,	constant of ester
			as employment	scientific approaches	persist in life-long	hydrolysis and
			opportunities outside the	to address problems	learning for personal	primary salt effect.
			country.	and find solutions.	and societal progress.	Determine the order
				Develop research	Demonstrate an	and energy of
				skills through	ability to conduct	activation using
				multi/inter/trans-	experiments and	kinetics.
				disciplinary	perform accurate	Construct and analyze
				perspectives.	quantitative	phase diagrams, and
					measurements with	examine the validity
					an understanding of	of Freundlich and
					the theory and	Langmuir adsorption
					develop practical	isotherms.
					skills in handling	Determine the rate
					analytical	constant using
					instruments.:	polarimeter and
					Interpret	stability constant
					experimental results,	using photo
					perform calculations	colorimeter, and
					on these results and	develop skills in
					draw reasonable,	handling colorimeter

					accurate conclusions. Assimilate and apply principles and concepts towards	and polarimeter.
					skill development, employability, critical and scientific approaches to address the problems	
M.Sc. Chemistry	PCCHJ20	Synthetic Organic Chemistry	The courses are designed to meet the global requirements and enables students to pursue higher education in the institutions abroad as well as employment opportunities outside the country.	Attain an in-depth knowledge in the respective domains augmented through self- learning. Assimilate and apply principles and concepts towards skill development and employability.	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. Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems	Analyze and evaluate the concepts of retrosynthesis, disconnection approach and protection of common functional groups and apply them in synthesizing target molecules. Evaluate the methods of asymmetric synthesis and resolution. Analyze the preparation and uses of selected organic

Spectroscopy to meet the global requirements and enables requirements to pursue higher a education in the institutions abroad as well as employment opportunities outside the country.	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 in the respective domains augmented through yellow the respective domains are respectively and the respective domains are res	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,	reagents. Evaluate the role of PTC in organic synthesis. Appraise the role of transition metals in selected named reactions and plan chemo selective, regioselective and stereoselective named reactions. Apply Ultraviolet spectroscopy for the identification of organic compounds and inorganic complexes, and to interpret the IR spectra of organic complexes. Discuss the different ionization techniques involved in Mass spectroscopy,
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			approaches to	and its advantages
			address the problems	over MS, and to
			and find solutions.	elucidate the
				molecular formulae
				and structures of
				unknown compounds
				using Mass
				spectroscopy.
				Analyze the splitting
				pattern in the 1H,
				13C, 19F and 31P
				NMR spectra for
				structural
				determination.
				Discuss the principle,
				instrumentation and
				applications of
				Mossbauer
				spectroscopy and
				analyze the
				Mossbauer spectra of
				iron and tin
				compounds.
				Explain hyper fine
				splitting in EPR and
				interpret EPR spectra
				of simple radicals and
L	1			<u> </u>

M.Sc. Chemistry	PCCHL20	Electro Chemistry	The courses are designed to meet the global requirements and enables students to pursue higher education in the institutions abroad as well as employment opportunities outside the country.	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	complexes, and to explain the electronic spectra for chemical analysis. Elaborate on the concepts and theories of microwave, IR, rotational and vibrational Raman, and electronic spectroscopy. Examine the concepts and theories of strong electrolytes and verify the Debye Huckle Onsager equation. Explain the principle and application of various analytical techniques. Compare the structure of double layers. Examine and predict the kinetics of electrode reaction of single step and multistep and discuss
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					address the problems and find solutions.	the theories and mechanism of
					and find solutions.	corrosion and
						passivation.
						Classify the types of
						fuel cells and ion
) (C C	DECLIES	T1 T1 A		A 1 . 1	A 1 1 1	selective electrodes.
M.Sc. Chemistry	PECHE20	Elective III A:	The courses are designed	Attain an in-depth	Attain an in-depth	Compare different
		Analytical	to meet the global	knowledge in the	knowledge on	thermal methods of
		Chemistry	requirements and enables	respective domains	advanced concepts in	analysis and explain
			students to pursue higher	augmented through	various branches of	their applications in
			education in the	self- learning.	chemistry augmented	material science.
			institutions abroad as well	Assimilate and apply	through self-learning,	Elaborate the
			as employment	principles and	persist in life-long	principle,
			opportunities outside the	concepts towards	learning for personal	instrumentations of
			country.	skill development	and societal progress.	the Gas, HPLC and
				and employability.	Assimilate and apply	SCF chromatographic
					principles and	techniques and their
					concepts towards	applications.
					skill development,	Examine the
					employability,	identification of metal
					critical and scientific	ions using AAS and
					approaches to	photo acoustic
					address the problems	spectroscopy.
					and find solutions.	Solve simple
						problems in chemistry
						using 'C' program.

M.Sc. Chemistry PF	Elective III B: Green Chemistry	The courses are designed to meet the global requirements and enables students to pursue higher education in the institutions abroad as well as employment opportunities outside the country.	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	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
				* *	

						chemistry.
M.Sc. Chemistry	PICHG20	Research	The courses are designed	Apply critical and	Attain an in-depth	Define research and
		Methodology	to meet the global	scientific approaches	knowledge on	its objectives,
			requirements and enables	to address problems	advanced concepts in	illustrate hypothesis
			students to pursue higher	and find solutions.	various branches of	testing, and draw the
			education in the	Develop research	chemistry augmented	research plan.
			institutions abroad as well	skills through	through self-learning,	Carry out literature
			as employment	multi/inter/trans-	persist in life-long	search offline and
			opportunities outside the	disciplinary	learning for personal	online to fix the
			country.	perspectives.	and societal progress.	research problem and
					Interpret	illustrate the
					experimental results,	importance of IF, SCI,
					perform calculations	h index and i-index.
					on these results and	Apply statistical
					draw reasonable,	analysis in research
					accurate conclusions.	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	The courses are designed	Attain an in-depth	Attain an in-depth	Examine the synthesis
		and Bioorganic	to meet the global	knowledge in the	knowledge on	and reactions of
		Chemistry	requirements and enables	respective domains	advanced concepts in	selected heterocyclic
			students to pursue higher	augmented through	various branches of	pigments, nucleic
			education in the	self- learning.	chemistry augmented	acids, vitamins and
			institutions abroad as well	Assimilate and apply	through self-learning,	alkaloids.
			as employment	principles and	persist in life-long	Evaluate the
			opportunities outside the	concepts towards	learning for personal	biosynthesis and
			country.	skill development	and societal progress.	metabolism of lipids,
				and employability.	Assimilate and apply	cholesterol and
					principles and	hormones.
					concepts towards	Explain the metabolic
					skill development,	pathway of amino
					employability,	acids and proteins and
					critical and scientific	to analyze the
					approaches to	structural aspects of
					address the problems	proteins.
					and find solutions.	Elaborate the role and
						metabolism of nucleic
						acids, genetic code,
						transcription and
						translation.
						Describe the structure
						and biological role of
						enzymes (α-
						chymotrypsin) and
						cofactors.

M.Sc. Chemistry	PCCHN20	Solid State	The courses are designed	Attain an in-depth	Attain an in-depth	Sketch the structures
		Chemistry and	to meet the global	knowledge in the	knowledge on	of perovskite, CdI,
		Nuclear	requirements and enables	respective domains	advanced concepts in	NiAs, spinels, explain
		Chemistry	students to pursue higher	augmented through	various branches of	electrical, magnetic
			education in the	self- learning.	chemistry augmented	and optical properties
			institutions abroad as well	Assimilate and apply	through self-learning,	of solids, compare
			as employment	principles and	persist in life-long	different methods of
			opportunities outside the	concepts towards	learning for personal	solid-state reactions
			country.	skill development	and societal progress.	and demonstrate
				and employability.	Assimilate and apply	selected single crystal
					principles and	growth techniques.
					concepts towards	Discuss the magnetic
					skill development,	properties of nuclides.
					employability,	Describe quark theory
					critical and scientific	and salient features of
					approaches to	nuclear models.
					address the problems	Illustrate the types of
					and find solutions.	nuclear reactions,
						explain the
						applications of
						radioisotopes in
						neutron activation
						analysis, isotope
						dilution analysis and
						age determination.
						Compare the
						different types of

M.Sc. Chemistry	РССНО20	Thermodynamics	The courses are designed	Attain an in-depth	Attain an in-depth	particle detectors, accelerators and explain the knowledge on Nuclear Waste Management. Determine the partial
			to meet the global requirements and enables students to pursue higher education in the institutions abroad as well as employment opportunities outside the country.	knowledge in the respective domains augmented through self- learning. Assimilate and apply principles and concepts towards skill development and employability.	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.	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

						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:	The courses are designed	Attain an in-depth	Attain an in-depth	Explain the
		Organometallic	to meet the global	knowledge in the	knowledge on	preparation,
		and	requirements and enables	respective domains	advanced concepts in	properties, structure
		Bioinorganic	students to pursue higher	augmented through	various branches of	and bonding of
		Chemistry	education in the	self- learning.	chemistry augmented	organometallic
			institutions abroad as well	Assimilate and apply	through self-learning,	complexes and
			as employment	principles and	persist in life-long	appraise 18 electron
			opportunities outside the	concepts towards	learning for personal	rule and EAN rule for
			country.	skill development	and societal progress.	metal carbonyls.
				and employability.	Assimilate and apply	Explain the

1	-	,		
			principles and	mechanism of
			concepts towards	organometallic
			skill development,	reactions,
			employability,	rearrangement
			critical and scientific	reactions of aluminum
			approaches to	and tin compounds.
			address the problems	Appraise the role of
			and find solutions.	transition metal
				catalysts in industrial
				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:	The courses are designed	Attain an in-depth	Attain an in-depth	Elaborate the concept
		Organic	to meet the global	knowledge in the	knowledge on	of organic farming.
		Farming and	requirements and enables	respective domains	advanced concepts in	Explain the vision and
		Solid Waste	students to pursue higher	augmented through	various branches of	importance of organic
		Management	education in the	self- learning.	chemistry augmented	farming movements,
			institutions abroad as well	Assimilate and apply	through self-learning,	apply
			as employment	principles and	persist in life-long	vermicomposting
			opportunities outside the	concepts towards	learning for personal	process and prepare
			country.	skill development	and societal progress.	bio-fertilizers.
				and employability.	Assimilate and apply	Evaluate the
					principles and	technology to
					concepts towards	approach the benefits
					skill development,	of organic farming.
					employability,	Explain the various
					critical and scientific	aspects of solid waste
					approaches to	management.
					address the problems	Demonstrate the
					and find solutions.	methods to reduce
						hazards.
M.Sc. Chemistry	PCCHP20	Practical IV:	The courses are designed	Attain an in-depth	Attain an in-depth	Develop skills to
		Organic	to meet the global	knowledge in the	knowledge on	perform two stage
		Chemistry II	requirements and enables	respective domains	advanced concepts in	preparations of
			students to pursue higher	augmented through	various branches of	organic compounds
			education in the	self- learning.	chemistry augmented	and crystallize them.
			institutions abroad as well	Assimilate and apply	through self-learning,	Calculate the
			as employment	principles and	persist in life-long	saponification value
			opportunities outside the	concepts towards	learning for personal	of oil.

	country.	skill development	and societal progress.	Estimate the amount
	Journal J.	and employability.	Demonstrate an	of the given organic
			ability to conduct	compound.
			experiments and	Demonstrate simple
			perform accurate	chromatographic
			quantitative	techniques.
			measurements with	Interpret the
			an understanding of	structure of organic
			the theory and	compounds by
			develop practical	analyzing spectral
			skills in handling	data.
			analytical	data.
			instruments. Interpret	
			experimental results,	
			perform calculations	
			on these results and	
			draw reasonable,	
			accurate conclusions.	
			Assimilate and	
			apply principles and	
			concepts towards	
			skill development,	
			=	
			employability, critical and scientific	
			approaches to	
			address the problems	
			and find solutions.	

M.Sc. Chemistry	PCCHQ20	Practical V:	The courses are designed	Attain an in-depth	Attain an in-depth	Estimate the amount
		Inorganic	to meet the global	knowledge in the	knowledge on	of metal ions in
		Chemistry II	requirements and enables	respective domains	advanced concepts in	inorganic mixtures by
			students to pursue higher	augmented through	various branches of	volumetric and
			education in the	self- learning.	chemistry augmented	gravimetric methods.
			institutions abroad as well	Apply critical and	through self-learning,	Estimate the
			as employment	scientific approaches	persist in life-long	percentage of metals
			opportunities outside the	to address problems	learning for personal	in ores and alloys by
			country.	and find solutions.	and societal progress.	volumetric and
				Develop research	Demonstrate an	gravimetric methods.
				skills through	ability to conduct	Prepare selected
				multi/inter/trans-	experiments and	inorganic complexes.
				disciplinary	perform accurate	Interpret the spectra of
				perspectives.	quantitative	selected inorganic
					measurements with	compounds.
					an understanding of	
					the theory and	
					develop practical	
					skills in handling	
					analytical	
					instruments.:	
					Interpret	
					experimental results,	
					perform calculations	
					on these results and	
					draw reasonable,	
					accurate conclusions.	

					Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions.	
M.Sc. Chemistry	PCCHR20	Practical VI: Physical Chemistry II	The courses are designed to meet the global requirements and enables students to pursue higher education in the institutions abroad as well as employment opportunities outside the country.	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. Demonstrate an ability to conduct experiments and perform accurate quantitative measurements with an understanding of the theory and develop practical	Apply laboratory skills to perform physio-chemical experiments. Demonstrate acid-base, redox and precipitation titrations using conductometry and potentiometry. Determine the pH of buffer solution potentiometrically and verify Ostwald dilution law and Onsager's equation. Interpret the experimental results obtained by

					skills in handling	conductometric and
					analytical	potentiometric
					instruments. :	titrations.
					Interpret	Describe spectral
					experimental results,	methods to calculate
					perform calculations	force constant and
					on these results and	interpret UV, IR and
					draw reasonable,	NMR spectra.
					accurate conclusions.	-
					Assimilate and	
					apply principles and	
					concepts towards	
					skill development,	
					employability,	
					critical and scientific	
					approaches to	
					address the problems	
					and find solutions.	
M.Sc. Chemistry	PICHA20	Dairy Chemistry	The courses are designed	Attain an in-depth	Attain an in-depth	Summarize the
			to meet the global	knowledge in the	knowledge on	knowledge on dairy
			requirements and enables	respective domains	advanced concepts in	products, processing,
			students to pursue higher	augmented through	various branches of	and their applications.
			education in the	self- learning.	chemistry augmented	Discuss the physical
			institutions abroad as well	Assimilate and apply	through self-learning,	and chemical
			as employment	principles and	persist in life-long	properties of milk.
			opportunities outside the	concepts towards	learning for personal	Explain the different
			country.	skill development	and societal progress.	processing techniques

M.Sc. Chemistry	PICHB20	Quality Control and Chemical	The courses are designed to meet the global	Attain an in-depth knowledge in the	Assimilate and apply principles and concepts towards skill development, employability, critical and scientific approaches to address the problems and find solutions. Attain an in-depth knowledge on	of milk. Explain marketing of milk and apply skills in detecting adulterants in milk products. Describe the nutritive value of milk and chemistry of dairy products in bone and muscle formation. Define quality control, quality assurance and
		Analysis	requirements and enables students to pursue higher education in the institutions abroad as well as employment opportunities outside the country.	respective domains augmented through self- learning. Assimilate and apply principles and concepts towards skill development and employability.	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	describe the necessity of TQM. Apply standards and specifications in quality control. Discuss the testing methods involved in quality control of food and textile industries. Evaluate quality analysis of water, soil, and air. Demonstrate the basics of good

					address the problems	laboratory practices
					and find solutions.	and describe the
						importance of
						sampling,
						documenting and
						usage of computer
						aids in QC labs.
M.Sc. Chemistry	PICHD20	Water	The courses are designed	Attain an in-depth	Attain an in-depth	Explain the physical
		Chemistry	to meet the global	knowledge in the	knowledge on	and chemical
			requirements and enables	respective domains	advanced concepts in	properties of water.
			students to pursue higher	augmented through	various branches of	Describe the
			education in the	self- learning.	chemistry augmented	instruments used for
			institutions abroad as well	Assimilate and apply	through self-learning,	water quality
			as employment	principles and	persist in life-long	monitoring.
			opportunities outside the	concepts towards	learning for personal	Examine the physical,
			country.	skill development	and societal progress.	chemical and
				and employability.	Assimilate and apply	biological pollutants
				Apply critical and	principles and	in water.
				scientific approaches	concepts towards	Demonstrate the
				to address problems	skill development,	treatment methods
				and find solutions.	employability,	used for recycling of
				Develop research	critical and scientific	waste water.
				skills through	approaches to	Explain the policies
				multi/inter/trans-	address the problems	and laws related to
				disciplinary	and find solutions.	water in Indian
				perspectives.		constitution.

M.Sc. Chemistry	PICHF20	Forensic	The courses are designed	Attain an in-depth	Attain an in-depth	Explain the need,
		Chemistry	to meet the global	knowledge in the	knowledge on	scope, and functions
			requirements and enables	respective domains	advanced concepts in	of forensic
			students to pursue higher	augmented through	various branches of	science.Discuss the
			education in the	self- learning.	chemistry augmented	mode of action and
			institutions abroad as well	Assimilate and apply	through self-learning,	chemical properties of
			as employment	principles and	persist in life-long	poisons.Explain the
			opportunities outside the	concepts towards	learning for personal	isolation, sample
			country.	skill development	and societal progress.	preparation and
				and employability.	Assimilate and apply	identification of
					principles and	forensic
					concepts towards	samples.Outline the
					skill development,	qualitative and
					employability,	quantitative
					critical and scientific	determination of
					approaches to	forensic samples by
					address the problems	analytical methods.
					and find solutions.	Demonstrate the
						process of lie
						detection and
						fingerprint detection.
M.Sc. Chemistry	PICHI20	Advanced	The courses are designed	Attain an in-depth	Attain an in-depth	Outline the working
		Instrumentation	to meet the global	knowledge in the	knowledge on	principle of NMR,
		Techniques	requirements and enables	respective domains	advanced concepts in	ESR and Mossbauer
			students to pursue higher	augmented through	various branches of	spectroscopy with
			education in the	self- learning.	chemistry augmented	selected applications.
			institutions abroad as well	Assimilate and apply	through self-learning,	Summarize the

			as employment	principles and	persist in life-long	operating principle,
			opportunities outside the	concepts towards	learning for personal	sample preparation
			country.	skill development	and societal progress.	and imaging modes of
				and employability.	Assimilate and apply	XPS, AES, SEM,
					principles and	TEM, etc.
					concepts towards	Outline the working
					skill development,	principle of separation
					employability,	techniques such as
					critical and scientific	HPLC, NP-HPLC,
					approaches to	RP-HPLC, CZE, ICP
					address the problems	and hyphenated
					and find solutions.	techniques.
						Define the principle of
						voltammetry such as
						LSV, AWV, DPV and
						theory and
						applications of Cyclic
						Voltammetry.
						Outline the methods
						of monitoring air and
						water pollution.
M.Sc. Chemistry	PICHJ20	Leather	The courses are designed	Attain an in-depth	Attain an in-depth	Outline the tanning
		Chemistry	to meet the global	knowledge in the	knowledge on	processes in leather
			requirements and enables	respective domains	advanced concepts in	industry.
			students to pursue higher	augmented through	various branches of	Discuss the cleaner
			education in the	self- learning.	chemistry augmented	technology in leather
			institutions abroad as well	Assimilate and apply	through self-learning,	industry.

			as amployment	nringinles and	persist in life-long	Illustrate the chrome
			as employment	principles and	1 *	
			opportunities outside the	concepts towards	learning for personal	tanning process.
			country.	skill development	and societal progress.	Outline the
				and employability.	Assimilate and apply	mechanism of tanning
					principles and	and role of surface
					concepts towards	charge and importance
					skill development,	of electrostatic, H-
					employability,	bond, dipole-dipole
					critical and scientific	and hydrophobic
					approaches to	interactions.
					address the problems	Apply waste water
					and find solutions.	management and zero
						discharge approaches
						in leather industry.
M.Sc. Chemistry	PNHRA20	Human Rights	This course educates the	Attain an in-depth		Obtain knowledge
			students about the	knowledge in the		and understand about
			Universal Declaration and	respective domains		fundamental Human
			International Covenants	augmented through		Rights
			on Human Rights.	self- learning		Understanding of the
						concepts of Indian
						constitution and to
						emphasize its
						importance
						Promote knowledge
						in understanding the
						concept of Universal
						Declaration and

						International
						Covenants on Human
						Rights.
						To strengthen the
						promotion and
						protection of human
						rights around the
						globe.
						Promote awareness on
						the Indian legal
						system, rule of law,
						human rights related
						policies, Acts and
						movements
M.Sc. Computer	PCCSC20	Research	To gain familiarity with a	Develop research	Contribute	Understand the
Science		Methodology	phenomenon or to achieve	skills through	significantly to the	concepts of research
			new insights into it.	multi/inter/trans-	research and the	design, research
				disciplinary	discovery of new	process and various
				perspectives.	knowledge and	types of research.
					methods in the field	
					of computer science.	
M.Sc. Computer	PECSB20	Elective I B:	Understand key terms and	Apply critical and	To design,	Assess cyber security
Science		Cyber Security	concepts in cyber law,	scientific approaches	implement, and	risk management
			intellectual property and	to address problems	evaluate a computer-	policies in order to
			cybercrimes, trademarks	and find solutions.	based system,	adequately protect an
			and domain theft.		process, component,	organization's critical
					or program for	information and

					various applications.	assets.
M.Sc. Computer	PCCSF20	Machine	To understands	Assimilate and apply	Ability to learn &	Understand the basics
Science		Learning	complexity of Machine	principles and	apply advance	of Machine Learning
			Learning algorithms and	concepts towards	concepts to generate	
			their limitations.	skill development	novel solutions for	
				&employability	solving complex	
					computational	
					problems.	
M.Sc. Computer	PCCSG20	Open Source	Understand how server-	Assimilate and apply	Ability to learn &	Familiar with basis
Science		Programming	side programming works	principles and	apply advance	syntax of PHP,
			on the web	concepts towards	concepts to generate	common PHP scripts
				skill development	novel solutions for	elements and creating
				&employability	solving complex	of the server-side
					computational	scripting using PHP,
					problems.	implement PHP
						database connectivity,
						perform operation on
						database and open
						source database
						management system.
M.Sc. Computer	PCCSH20	Wireless	To provide an overview of	Attain an in-depth	To design,	Classify different
Science		Communication	Wireless Communication	knowledge in the	implement, and	technologies followed
		s and Networks	Networks area and its	respective domains	evaluate a computer-	in various generation
			applications	augmented through	based system,	of cellular networks
				self-learning.	process, component,	
					or program for	
					various applications.	

M.Sc. Computer	PCCSL20	Web Services	To understand Web	Assimilate and apply	Contribute	Able to apply SOAP,
Science			Services and its	principles and	significantly to the	HTTP and UDDI
			implementation model	concepts towards	research and the	services in the web
				skill development	discovery of new	applications
				&employability	knowledge and	
					methods in the field	
					of computer science.	
M.Sc. Computer	PCCSM20	Distributed and	To explain distributed	Attain an in-depth	To design,	Understand the
Science		Cloud	system and cloud models	knowledge in the	implement, and	concepts of cloud
		Computing		respective domains	evaluate a computer-	Architecture and its
				augmented through	based system,	services
				self-learning	process, component,	
					or program for	
					various applications	
M.Sc. Computer	PECSE20	Elective IIIA:	To understand smart	Attain an in-depth	Contribute	Understand the
Science		Internet of	objects and IoT	knowledge in the	significantly to the	fundamentals of IoT.
		Things	Architectures	respective domains	research and the	
				augmented through	discovery of new	
				self-learning	knowledge and	
					methods in the field	
					of computer science.	
M.Sc. Computer	PECSF20	Elective III B:	Understanding the	Assimilate and apply	To apply	Understand the system
Science		Multimedia	Multimedia	principles and	fundamental	design principles of
		Communication	Communications Systems,	concepts towards	knowledge of	multimedia
			Application and Basic	skill development	computing and	communications
			Principles	&employability.	science relevant to	systems
					the discipline.	

M.Sc. Computer	PECSG20	Elective IV A:	To learn more about the	Attain an in-depth	Attain an in-depth	Define the big data,
Science		Big Data	trends in Big Data and	knowledge in the	knowledge in the	types of data and
		Analytics	how they impact the	respective domains	respective domains	understand the need of
			business world like Risk	augmented through	augmented through	big data analytics
			Marketing – Healthcare -	self-learning.	self-learning.	
			Financial Services - etc.			
M.Sc. Computer	PICSD20	Wireless Sensor	Understand the challenges	Attain an in-depth	To design,	Understand the
Science		Networks	and applications of WSN	knowledge in the	implement, and	concepts of Wireless
				respective domains	evaluate a computer-	Technology and
				augmented through	based system,	supporting Protocols.
				self-learning.	process, component,	
					or program for	
					various applications.	
M.Sc. Computer	PICSF20	Steganography	To provide the	An in-depth	Contribute	Discuss the need for
Science		and Digital	importance of digital	knowledge in the	significantly to the	watermarking and
		Watermarking	watermarking and	respective domains	research and the	steganography
			Steganography	augmented through	discovery of new	
				self-learning.	knowledge and	
					methods in the field	
					of computer science.	
M.Sc. Computer	PICSG20	Cloud Solution	To study the decision on	Attain an in-depth	To apply	Understand the basics
Science		with Azure	adoption of cloud	knowledge in the	fundamental	of Cloud Computing
			computing by a	respective domains	knowledge of	with Azure and its
			prospective cloud services	augmented through	computing and	services.
			consumer enterprise,	self-learning.	science relevant to	
			including possible		the discipline.	
			significant benefits of its			

M.Sc. Computer Science	PICSH20	Introduction to Block chain	adoption, in order to ensure informed and accountable information technology (IT) related decision-making. Understand how blockchain systems	Attain an in-depth knowledge in the	To apply fundamental	Understand design principles of Bitcoin
		Technology	(mainly Bitcoin and Ethereum) work	respective domains augmented through self-learning.	knowledge of computing and science relevant to the discipline.	and Ethereum
M.Sc. Electronic Media	PCEMA20	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	PCEMC20	Videography	To acquire the knowledge	Assimilate and apply	To Assimilate and	Evaluate the Camera
Media			and skill to select and	principles and	apply Video and	Operation and
			apply those aesthetic	concepts towards	Audio editing	Lighting Techniques
			elements to translate	skill development	techniques,	in Indoor Production.
			significant ideas into	And employability.	Multimedia, and	
			significant messages		Web	
			through Videography.		Designing Projects	
					towards skill	
					development and	
					employability.	
M.Sc. Electronic	PCEMD20	Practical I –	To give a hands-on	Assimilate and apply	To Assimilate and	Acquiring and
Media		Video	experience to students in	principles and	apply Video and	applying knowledge
		Production	the handling of video-	concepts towards	Audio editing	in shots, angles and
			cameras and practice the	skill development	techniques,	camera movements.
			techniques of Video	And employability.	Multimedia, and	
			Production.		Web	
					Designing Projects	
					towards skill	
					development and	
					employability.	
M.Sc. Electronic	PIEMA20	Independent	To specialize in Radio and	Integrate issues of	To obtain wide	Evaluating the
Media		Elective –Radio	Television and gain	social relevance in	Knowledge in the	components of
		and Television	analytical, technical and	the field of study.	area of Electronic	television news and
		News casting	practical skills and be		Media Production	the role of Media
			equipped in the broadcast		and	professionals
			marketplace.		demonstrateClear	
					and coherent	

					communication	
M.C. Electronic	PCEMF20	Advanced	To manage students for	Attain on in double	skills. To obtain wide	A a garinin a 4la a
M.Sc. Electronic	PCEMF20	Advanced	To prepare students for	Attain an in-depth		Acquiring the
Media		Television	professional challenges of	knowledge in the	Knowledge in the	knowledge on
		Production	today and tomorrow and	respective domains	area of Electronic	Production
			to expose them to real	augmented	Media Production	management and
			world production scenario.	Through self-	and demonstrate	production elements.
				learning.	Clear and coherent	
					communication	
					skills.	
M.Sc. Electronic	PCEMG20	Radio	To introduce students to	Attain an in-depth	To obtain wide	Acquiring the
Media		Programme	the principles of sounds	knowledge in the	Knowledge in the	knowledge on
		Production	and the art of making	respective domains	area of Electronic	Production
			audio programmes	augmented	Media Production	management and
				Through self-	and demonstrate	production elements.
				learning.	Clear and coherent	
					communication	
					skills.	
M.Sc. Electronic	PCEMH20	Media Analysis	To introduce the basic	Apply critical and	To Assimilate the	Examine the Concept
Media		Techniques	media analysis techniques	scientific approaches	critical and scientific	of Sociological and
			with practice applications	to address problems	approaches to	Discourse Analysis.
			in order to develop a	and find	address the Research	
			critical perspective of	solutions.	problems and	
			media texts.		Find solutions.	

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

M.Sc. Electronic	PEEMD20	Elective II B:	It is particularly aimed at	Develop research	.To obtain wide	Evaluating the various
Media		Mobile	equipping with Wireless	skills through	Knowledge in the	kinds of wireless
		Communication	Communication students	multi/inter/trans-	area of Electronic	network and its uses.
			with advanced	disciplinary	Media Production	
			communication theory and	perspectives.	and demonstrate	
			technologies, vital for a		Clear and coherent	
			successful career in digital		communication	
			economy.		skills.	
M.Sc. Electronic	PCEMK20	Film Studies	To provide in-depth	Persist in life-long	To Integrate the	Analysing the
Media			knowledge on films, to	learning for personal	issues of social and	concept of film as an
			develop a critically	and societal progress.	Ethical relevance in	art and characteristics
			informed sense of the		the field of	of films.
			history and development		Documentary and	
			of film conventions, both		Short film	
			mainstream and		Production.	
			alternative, and			
			understand the language			
			and use of films.			
M.Sc. Electronic	PCEML20	Communication	To teach in detail the need	Develop research	To Assimilate the	Acquiring the
Media		Research	for communication	skills through	critical and scientific	knowledge on
		Methods	research and the	multi/inter/trans-	approaches to	research report writing
			techniques and process of	disciplinary	address the Research	and presentation.
			research studies in the	perspectives.	problems and	
			field of Media		Find solutions.	

M.Sc. Electronic	PCEMM20	Public Relations	To initiate students to the	Persist in life-long	To become ethically	Analysing the role of
Media		& Corporate	field of Public Relations	learning for personal	committed media	PR in press and other
		Communication	and Corporate	and societal progress.	professionals and	media relations.
			Communication by giving		entrepreneurs by	
			them a background, trends		adhering to	
			and techniques in PR		Human values, the	
					Indian and the	
					Global cultures.	
M.Sc. Electronic	PCEMO20	Practical VI –	To enable students to	Assimilate and apply	To Assimilate and	Compile the Concept
Media		Basics 3D	learn the art of 3D	principles and	apply Video and	of Lighting and
		Graphics and	animation and modelling	concepts towards	Audio editing	Camera effect in 3d
		Animations	using 3D graphics	skill	techniques,	Animation.
			software.	developmentAnd	Multimedia, and	
				employability.	WebDesigning	
					Projects towards skill	
					development and	
					employability.	
M.Sc. Electronic	PEEME20	Elective III A:	To initiate students to the	Persist in life-long	To acquire primary	Assessing the
Media		Technical	types and techniques of	learning for personal	Research skills, and	importance of
		Business	organizational	and societal progress.	understand the	business
		Communication	communication		importance of	correspondence and
					innovations,	the writing skills.
					Incubation and	
					entrepreneurship.	

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	Creating the Web pages and Making Links.

					Web	
					Designing Projects	
					towards skill	
					development and	
					employability.	
M.Sc. Electronic	PEEMG20	Elective IV A:	To enable students to learn	Develop research	To Assimilate and	Evaluating the
Media		Web Designing	the basic html coding and	skills through	apply Video and	Concept for planning
			layout design skills	multi/inter/trans-	Audio editing	the Website.
			required for creating	disciplinary	techniques,	
			websites	perspectives.	Multimedia, and	
					Web	
					Designing Projects	
					towards skill	
					development and	
					employability.	
M.Sc. Electronic	PIEMD20	Independent	To study the global	Develop research	To become ethically	Evaluating the
Media		Elective-	communication to learn	skills through	committed media	concept of
		International	about its effects and	multi/inter/trans-	professionals and	disappearing borders
		Communication	influence on	disciplinary	entrepreneurs by	of empowerment
			Globalization.	perspectives.	adhering to	
					Human values, the	
					Indian and the	
					Global cultures.	

M. Sc.	PCMAA20	Modern Algebra	Course designed to	Attain an in-depth	Attain in-depth	Assess the properties
Mathematics			demonstrate problem	knowledge in the	knowledge in Pure	of Groups and
			solving skills in the	respective domains	Mathematics through	Sylow's theorem.
			context of Modern	augmented through	theorems and	Apply field extension
			Algebra which includes	self- learning.	Applied Mathematics	property in Algebraic
			groups and fields.	Assimilate and apply	using real-life	extensions.
				principles and	examples and	Get the knowledge of
				concepts towards	simulation results.	Transcendence e and
				skill development	Develop a deep	roots of polynomial.
				and employability.	interest in Advanced	Know about the
					Mathematics and	Galois Theory.
					have the capability to	Have the knowledge
					understand the	on the concepts of
					outcomes in various	solvability by radicals.
					branches of	
					Mathematics.	
					Have the capability	
					to apply the	
					programming	
					concepts of JAVA,	
					MATLAB, and R	
					language to model,	
					formulate and solve	
					real-life problems.	
					Acquire profound	
					knowledge in	
					Mathematics to	

		I			1 1 0	
					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.	PCMAB20	Real Analysis - I	The course is designed to	Attain an in-depth	Attain in-depth	Understand n-
Mathematics			provide the concepts of	knowledge in the	knowledge in Pure	dimensional space Rn
			Modern analysis which	respective domains	Mathematics through	and the metric space
			include Euclidean space of	augmented through	theorems and	whose topology is
			n dimension, metric space,	self- learning.	Applied Mathematics	uniquely determined
			functions of bounded	Assimilate and apply	using real-life	by the algebraic
			variation, R-S integral,	principles and	examples and	structure.
			and Lebesgue integral.	concepts towards	simulation results.	Deal with the

		1 11 1		6 61
		skill development	Develop a deep	functions of bounded
		and employability.	interest in Advanced	variations and some of
			Mathematics and	their properties.
			have the capability to	Know about the
			understand the	Riemann-Stieltjes
			outcomes in various	integral and its
			branches of	properties which is a
			Mathematics.	generalization of the
			: Have the capability	Riemann integral.
			to apply the	Recognize the
			programming	necessary and
			concepts of JAVA,	sufficient conditions
			MATLAB, and R	for the existence of
			language to model,	the R-S integral.
			formulate and solve	Grasp the class of
			real-life problems.	Lebesgue integrable
			Acquire profound	functions which is
			knowledge in	defined in terms of
			Mathematics to	upper and lower
			develop a range of	bounds using the
			generic skills to	Lebesgue measure of
			qualify for the	a set.
			fellowship	
			examinations	
			approved by UGC	
			like CSIR-NET, JRF,	
			GATE, and 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.	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. Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Develop a deep interest in Advanced Mathematics and have the capability to understand the outcomes in various branches of Mathematics.	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.
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to apply the programming concepts of JAVA, MATLAB, and R language to model, formulate and solve real-life problems. 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			Have the capability	Determine the local
programming concepts of JAVA, MATLAB, and R language to model, formulate and solve real-life problems. 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			-	
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like CSIR-NET, JRF, GATE, and SET. Develop teaching, research, and technical skills in Mathematics for employment in different sectors and enhance self-learning			examinations	
GATE, and SET. Develop teaching, research, and technical skills in Mathematics for employment in different sectors and enhance self-learning			approved by UGC	
Develop teaching, research, and technical skills in Mathematics for employment in different sectors and enhance self-learning			like CSIR-NET, JRF,	
research, and technical skills in Mathematics for employment in different sectors and enhance self-learning			GATE, and SET.	
technical skills in Mathematics for employment in different sectors and enhance self-learning			Develop teaching,	
Mathematics for employment in different sectors and enhance self-learning			research, and	
employment in different sectors and enhance self-learning			technical skills in	
different sectors and enhance self-learning			Mathematics for	
different sectors and enhance self-learning			employment in	
			= :	
			enhance self-learning	
wind folig fourning			& life-long learning	

					to compete at the global level and meet social needs.	
M. Sc.	PCMAD20	Differential	Course designed to	Attain an in-depth	Attain in-depth	Understand ordinary
Mathematics	T CWIAD20	Equations	demonstrate problem	knowledge in the	knowledge in Pure	differential equations
Wathematics		Equations	solving skills in the	respective domains	Mathematics through	of various type, their
			context of Differential	augmented through	theorems and	solutions, and
			Equation which includes	self- learning.	Applied Mathematics	fundamental concepts
			Ordinary differential	Assimilate and apply	using real-life	about their
			equation and dynamical	principles and	examples and	existence.Obtain
			problems.	concepts towards	simulation results.	solutions of the
			problems.	skill development	Develop a deep	Homogeneous
				and employability.	interest in Advanced	equation with constant
				and employability.	Mathematics and	coefficient and
					have the capability to	Homogeneous
					understand the	equation with analytic
					outcomes in various	coefficient.Comprehe
					branches of	nd the Bessel
					Mathematics.: Have	functions, Legendre
					the capability to	equation, Legendre
					apply the	polynomials and
					11 0	Regular singular
					programming	
					concepts of JAVA, MATLAB, and R	points.Know Picard's
					, and the second	method of obtaining
					language to model,	successive
					formulate and solve	approximations of
					real-life	solutions of first order

					problems.Acquire	differential
						equations.Understand
					profound knowledge	*
					in Mathematics to	Eigen values and
					develop a range of	Eigen functions of
					generic skills to	Strum-Liovuille
					qualify for the	systems, and obtain
					fellowship	the solutions of initial
					examinations	and boundary value
					approved by UGC	problems.
					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.	PEMAA20	Elective - I A:	Course designed to	Attain an in-depth	Attain in-depth	Understand the line
Mathematics		Differential	understand the concept of	knowledge in the	knowledge in Pure	integrals, deal with
		Geometry	curvature of a space curve,	respective domains	Mathematics through	differential forms and
			signed curvature of a	augmented through	theorems and	calculate arc length,
			plane curve and to	self- learning.	Applied Mathematics	curvature of surfaces.

T	1	A:: 1-4 1	:	A
	compute the curvature and	Assimilate and apply	using real-life	Analyze involutes,
	torsion of space curves.	principles and	examples and	evolutes and
		concepts towards	simulation results.	fundamental existence
		skill development	Develop a deep	theorem for space
		and employability.	interest in Advanced	curves.
			Mathematics and	Apply problem
			have the capability to	solving with
			understand the	differential geometry
			outcomes in various	to diverse situations in
			branches of	physics, engineering
			Mathematics.	and in other
			Have the capability	mathematical
			to apply the	contexts.
			programming	Evaluate the
			concepts of JAVA,	fundamental forms of
			MATLAB, and R	a surface.
			language to model,	Compute the Gaussian
			formulate and solve	curvature, the mean
			real-life problems.	curvature, the
			Acquire profound	curvature lines and the
			knowledge in	asymptotic lines
			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.	PEMAB20	Elective - I B:	Course designed to	Attain an in-depth	Attain in-depth	Understand the
Mathematics		Mathematical	improve the ability to	knowledge in the	knowledge in Pure	mathematical basis of
		Modelling	solve problems, including	respective domains	Mathematics through	common algorithms,
			applications outside of	augmented through	theorems and	and the ability to
			mathematics, by means of	self- learning.	Applied Mathematics	calculate accurately
			intuition, creativity,	Assimilate and apply	using real-life	and efficiently.
			guessing and the	principles and	examples and	Demonstrate the use
			experience gained through	concepts towards	simulation results.	of mathematical
			the study of particular	skill development	Develop a deep	reasoning by
			examples and	and employability.	interest in Advanced	justifying and
			mathematical models		Mathematics and	generalizing patterns
					have the capability to	and relationships
					understand the	between the variables

					outcomes in various	in the mathematical
					branches of	models.
					Mathematics.	Formulate and
					Have the capability	qualitatively analyze
					to apply the	mathematical models
					programming	of a wide range of
					concepts of JAVA,	systems and
					MATLAB, and R	processes.
					language to model,	Recognize the types
					formulate and solve	of Mathematical
					real-life problems.	models and the
					Inculcate research-	complexity in each
					level thinking in the	system.
					field of pure and	Recognize the power
					applied mathematics	of mathematical
					and apply theoretical	modelling and
					knowledge to write	analysis and be able to
					the dissertation using	apply their
					the Mathematical	understanding to their
					software LaTeX.	further studies.
M. Sc.	PIMAA20	Independent	Course designed to	Attain an in-depth	Acquire profound	Understand the
Mathematics		Elective I A:	demonstrate problem	knowledge in the	knowledge in	importance of various
		Fundamentals of	solving skills in the	respective domains	Mathematics to	types of Groups.
		Group Theory	context of fundamentals of	augmented through	develop a range of	Extend the knowledge
			groups which includes	self- learning.	generic skills to	in some important
			groups and subgroups.	Assimilate and apply	qualify for the	groups
				principles and	fellowship	(Homomorphism and

				concepts towards	examinations	Isomorphism)
				skill development	approved by UGC	Understand the
				and employability.	like CSIR-NET, JRF,	concepts of
					GATE, and SET.	fundamentals of finite
						abelian groups.
						Acquire benefits of
						Sylow's theorem and
						classify the Class
						equations.
						Solve various
						objective type
						problems using simple
						concepts.
M. Sc.	PIMAB20	Independent	Course designed to	Attain an in-depth	Attain in-depth	Understand the
Mathematics		Elective I B:	enhance the problem	knowledge in the	knowledge in Pure	concepts of Number
		Quantitative	solving abilities and	respective domains	Mathematics through	System and aptitude
		Aptitude for	improve the basic	augmented through	theorems and	problems.
		Competitive	mathematical skills	self- learning.	Applied Mathematics	Recollect the
		Examinations-I		Assimilate and apply	using real-life	formulae and solve
				principles and	examples and	problems on profit and
				concepts towards	simulation results.	loss, Interest and Time
				skill development	Acquire profound	and Work.
				and employability.	knowledge in	Demonstrate basic
					Mathematics to	understanding on data
					develop a range of	interpretation and
					generic skills to	exhibit eloquence in
					qualify for the	verbal reasoning.

					fellowship examinations approved by UGC like CSIR-NET, JRF, GATE, and SET.	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.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Develop a deep interest in Advanced Mathematics and have the capability to understand the outcomes in various branches of Mathematics. : Have the capability to apply the programming	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 concepts of finite division ring Know about division rings having the field in their centers.

concepts of JAVA,
MATLAB, and R
language to model,
formulate and solve
real-life problems.
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.	PCMAF20	Real Analysis -	The course is designed to	Attain an in-depth	Attain in-depth	Understand the theory
Mathematics		II	provide the concepts of	knowledge in the	knowledge in Pure	of double sequences
			Modern analysis which	respective domains	Mathematics through	and double series
			deals with double	augmented through	theorems and	which is an extension
			sequence and series,	self- learning.	Applied Mathematics	of the single or
			Fourier series, sequences,	Assimilate and apply	using real-life	ordinary sequences
			and series of functions.	principles and	examples and	and series and identify
				concepts towards	simulation results.	the convergence and
				skill development	Develop a deep	divergence of infinite
				and employability.	interest in Advanced	product.
					Mathematics and	Determine the
					have the capability to	properties of the
					understand the	Fourier coefficient
					outcomes in various	and solve the problem
					branches of	for the orthonormal
					Mathematics.	system of functions.
					: Have the capability	. Identify the
					to apply the	Convergence of a
					programming	sequence and series of
					concepts of JAVA,	functions.
					MATLAB, and R	Link the
					language to model,	multiplication of
					formulate and solve	power series,
					real-life problems.	reciprocal of power
					Acquire profound	series, and real power
					knowledge in	series.
					Mathematics to	. Deal with the

					dayalan a ranga of	concepts of
					develop a range of	concepts of
					generic skills to	Directional derivative,
					qualify for the	Total derivative,
					fellowship	Chain rule, Inverse
					examinations	function, and Implicit
					approved by UGC	function theorems.
					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.	PCMAG20	Partial	Course designed to apply	Attain an in-depth	Attain in-depth	Apply specific
Mathematics		Differential	partial derivative equation	knowledge in the	knowledge in Pure	methodologies,
		Equations and	techniques to predict the	respective domains	Mathematics through	techniques and
		Integral Partial	behavior of certain	augmented through	theorems and	resources to conduct
		Differential	phenomena	self- learning.	Applied Mathematics	research and produce
		Equations		Assimilate and apply	using real-life	innovative results.
				principles and	examples and	Solve problems of
				concepts towards	simulation results.	heat conduction

skill development and employability. Bevelop a deep interest in Advanced Mathematics and have the capability to understand the outcomes in various branches of Mathematics. : Have the capability to apply the programming concepts of JAVA, MATLAB, and R language to model, formulate and solve real-life problems. 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,	T		T		
Mathematics and have the capability to understand the outcomes in various branches of equation by canonical equation. Have the capability to apply the programming concepts of JAVA, MATLAB, and R language to model, formulate and solve real-life problems. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC			_	• •	
have the capability to understand the outcomes in various branches of Mathematics. : Have the capability to apply the programming concepts of JAVA, MATLAB, and R language to model, formulate and solve real-life problems. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC			and employability.	interest in Advanced	=
understand the outcomes in various branches of Mathematics. : Have the capability to apply the programming concepts of JAVA, MATLAB, and R language to model, formulate and solve real-life problems. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC				Mathematics and	conditions.
outcomes in various branches of Mathematics. : Have the capability to apply the programming concepts of JAVA, MATLAB, and R language to model, formulate and solve real-life problems. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC				have the capability to	Use the knowledge of
branches of Mathematics. : Have the capability to apply the programming concepts of JAVA, MATLAB, and R language to model, formulate and solve real-life problems. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC				understand the	PDEs, to solve one
Mathematics. : Have the capability to apply the programming concepts of JAVA, MATLAB, and R language to model, formulate and solve real-life problems. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC				outcomes in various	dimensional wave
: Have the capability to apply the programming concepts of JAVA, MATLAB, and R language to model, formulate and solve real-life problems. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC				branches of	equation by canonical
to apply the programming concepts of JAVA, MATLAB, and R language to model, formulate and solve real-life problems. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC and integral PDE problems with finite difference methods. Develop mathematical skills to solve problems involving convolutions.				Mathematics.	equation.
programming concepts of JAVA, MATLAB, and R language to model, formulate and solve real-life problems. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC				: Have the capability	Solve practical PDE
concepts of JAVA, MATLAB, and R language to model, formulate and solve real-life problems. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC				to apply the	and integral PDE
MATLAB, and R language to model, mathematical skills to solve problems involving convolutions. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC				programming	problems with finite
language to model, formulate and solve real-life problems. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC				concepts of JAVA,	difference methods.
formulate and solve real-life problems. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC				MATLAB, and R	Develop
real-life problems. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC				language to model,	mathematical skills to
Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC				formulate and solve	solve problems
knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC				real-life problems.	involving
Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC				Acquire profound	convolutions.
develop a range of generic skills to qualify for the fellowship examinations approved by UGC				knowledge in	
generic skills to qualify for the fellowship examinations approved by UGC				Mathematics to	
qualify for the fellowship examinations approved by UGC				develop a range of	
fellowship examinations approved by UGC				generic skills to	
examinations approved by UGC				qualify for the	
approved by UGC				fellowship	
				examinations	
				approved by UGC	
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	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.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Develop a deep interest in Advanced Mathematics and have the capability to understand the outcomes in various branches of Mathematics.	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

Have the capability to apply the programming concepts of JAVA, and Hamilton's concepts of Java, and	
programming concepts of JAVA, and Hamilton's and Ha	1 1
concepts of JAVA, MATLAB, and R language to model, formulate and solve real-life problems. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC	_
MATLAB, and R language to model, formulate and solve real-life problems. Acquire profound knowledge in transformati Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC	
language to model, formulate and solve real-life problems. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC	on's
formulate and solve real-life problems. Acquire profound solve the knowledge in transformati Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC	
real-life problems. Acquire profound solve the knowledge in transformati Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC	oncepts of
Acquire profound knowledge in transformati Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC	
knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC	ons and
Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC	
develop a range of generic skills to qualify for the fellowship examinations approved by UGC	ons by
generic skills to qualify for the fellowship examinations approved by UGC	nge and
qualify for the fellowship examinations approved by UGC	ckets.
fellowship examinations approved by UGC	
examinations approved by UGC	
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	
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	social needs. Have the capability to apply the programming concepts of JAVA, MATLAB, and R language to model, formulate and solve real-life problems. Inculcate research-	Understand the mathematical basis of common algorithms in Latex. Demonstrate the use of mathematical equations, tables and figures in Latex. Demonstrate
				and employability.	level thinking in the field of pure and applied mathematics and apply theoretical knowledge to write the dissertation using the Mathematical software LaTeX.	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.	PEMAD20	Elective II B:	Course designed to	Attain an in-depth	Attain in-depth	Understand the
Mathematics		Fluid Dynamics	understand the concepts of	knowledge in the	knowledge in Pure	concepts of fluid flow
			fluid motion, equations of	respective domains	Mathematics through	Identify pressure of
			motion of a fluid, three	augmented through	theorems and	fluid in different kind
			dimensional flows and	self- learning.	Applied Mathematics	of Motion
			viscous flows and apply it	Assimilate and apply	using real-life	Analyze the topics of
			in practical situations.	principles and	examples and	Axi-Symmetric
				concepts towards	simulation results.	Flows, Stoke's Stream
				skill development	Develop a deep	Function
				and employability.	interest in Advanced	Determine the Stream
					Mathematics and	Function, the
					have the capability to	Complex Potential for
					understand the	Two-Dimensional,
					outcomes in various	Irrotational,
					branches of	Incompressible Flow.
					Mathematics.	Explain the concepts
					Have the capability	the Rate of Strain
					to apply the	Quadric and Principal
					programming	Stresses, Stress
					concepts of JAVA,	Analysis in Fluid
					MATLAB, and R	Motion, the
					language to model,	Coefficient of
					formulate and solve	Viscosity and Laminar
					real-life problems.	Flow, the Navier-
					Acquire profound	Stokes Equations of
					knowledge in	Motion of a Viscous

					Mathematics to	Fluid.
					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.	PIMAC20	Independent	Course designed to	Attain an in-depth	Acquire profound	Demonstrate various
Mathematics		Elective 2 A:	demonstrate problem	knowledge in the	knowledge in	characteristic of
		Fundamentals of	solving skills in the	respective domains	Mathematics to	Rings.Extend the
		Ring Theory	context of Fundamentals	augmented through	develop a range of	knowledge in Ideals,
			of Ring theory which	self- learning.	generic skills to	Fields of Quotients
			includes Rings, Sub rings	Assimilate and apply	qualify for the	and polynomial
			and Types of Rings.	principles and	fellowship	rings.Validate

				concepts towards skill development and employability.	examinations approved by UGC like CSIR-NET, JRF, GATE, and SET.	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.	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 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

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.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Develop a deep interest in Advanced Mathematics and have the capability to understand the outcomes in various branches of Mathematics.	apply formulas. Ability to face the competitive examinations with a clear approach. Understand basis as a collection of basic open sets and the concepts of continuous functions and their properties in topological spaces. CO 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
					understand the outcomes in various branches of Mathematics.	product of an arbitrary family of spaces. Grasp the concept of compactness which is
					Have the capability to apply the programming concepts of JAVA,	the generalization to topological spaces of the property of closed and bounded subsets
					MATLAB, and R language to model,	of the real line. Deal with the

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				formulate and solve	countability and
				real-life problems.	separation axioms
				Acquire profound	. Know the theorems
				knowledge in	with the conditions
				Mathematics to	under which a
				develop a range of	topological space can
				generic skills to	be embedded in metric
				qualify for the	space.
				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.	PCMAJ20	Numerical	To develop the skills in	Attain an in-depth	Attain in-depth	Find the solution in
Mathematics		Analysis	solving Numerical	knowledge in the	knowledge in Pure	Numerical, Algebraic
			problems and apply them	respective domains	Mathematics through	and transcendental
			in other disciplines and in	augmented through	theorems and	equations.
			wider areas of research.	self- learning.	Applied Mathematics	Solve the set of
				Assimilate and apply	using real-life	algebraic equations by
				principles and	examples and	direct and iterative
				concepts towards	simulation results.	methods.
				skill development	Develop a deep	Analyze the values of
				and employability.	interest in Advanced	a function for any
					Mathematics and	intermediate value of
					have the capability to	the independent
					understand the	variable.
					outcomes in various	Compute the
					branches of	numerical solution of
					Mathematics.	various types of
					Have the capability	ordinary differential
					to apply the	equations.
					programming	Acquire the numerical
					concepts of JAVA,	solution of Partial
					MATLAB, and R	Differential
					language to model,	Equations.
					formulate and solve	
					real-life problems.	
					Acquire profound	
					knowledge in	
					Mathematics to	

					1 1 0	
					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.	PCMAK20	Probability	To understand the concept	Attain an in-depth	Attain in-depth	Characterize
Mathematics		Theory	of random variables,	knowledge in the	knowledge in Pure	probability models
			characteristic functions,	respective domains	Mathematics through	and function of
			probability distribution,	augmented through	theorems and	random variables
			and limit theorem and to	self- learning.	Applied Mathematics	based on single and
			solve real-world problems.	Assimilate and apply	using real-life	multiple random
			sorre rear world problems.	principles and	examples and	variables.
				concepts towards	simulation results.	Evaluate and apply
				concepts towards	simulation results.	Evaluate and apply

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skill developme		expected value,
and employabile		moments and
	Mathematics and	understand the
	have the capability to	concept of Chebyshev
	understand the	inequality.
	outcomes in various	Analyze the concepts
	branches of	of characteristic
	Mathematics.	functions and its
	Have the capability	properties.
	to apply the	Apply probability
	programming	distribution to solve
	concepts of JAVA,	the real world
	MATLAB, and R	problems.
	language to model,	. Understand the
	formulate and solve	concept of limit
	real-life problems.	theorem and its
	Acquire profound	applications.
	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.	

M. Sc. Mathematics	PCMAL20	Operations Research	To understand the mathematical tools used in Operations Research that are needed to solve the optimization problems which plays important role in business management.	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 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. Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Develop a deep interest in Advanced Mathematics and have the capability to understand the outcomes in various branches of Mathematics.	Determine the feasible solution using Revised simplex method, Duality and bounded variable algorithm. 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
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			: Have the capability	real world problems.
			to apply the	Solve constrained and
			programming	unconstrained
			concepts of JAVA,	optimization problems
			MATLAB, and R	using Hookes and
			language to model,	Jeeves algorithm,
			formulate and solve	Gradient projection,
			real-life problems.	Lagrange multipliers,
			Acquire profound	Kuhn-Tucker
			knowledge in	conditions etc.
			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	
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					to compete at the global level and meet social needs	
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.	Have the capability to apply the programming concepts of JAVA, MATLAB, and R language to model, formulate and solve real-life problems. 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.	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 by manipulating classes and methods in the Java programming language. Explore the Java programming by using arrays.

M. Sc.	PEMAG20	Elective III B:	To learn the advanced	Attain an in-depth	: Have the capability	Familiarize with
Mathematics		Programming	language R that performs	knowledge in the	to apply the	basics of R software
		with R	various complex statistical	respective domains	programming	and built in function
			computations and	augmented through	concepts of JAVA,	of R
			calculations.	self- learning.	MATLAB, and R	Identify the
				Assimilate and apply	language to model,	characteristics of
				principles and	formulate and solve	datasets and plot the
				concepts towards	real-life problems.	datasets in R using
				skill development	Inculcate research-	graphical methods.
				and employability.	level thinking in the	Demonstrate
					field of pure and	understanding and use
					applied mathematics	of for loop, if
					and apply theoretical	statement and break.
					knowledge to write	Implement the
					the dissertation using	learning techniques
					the Mathematical	and computing
					software LaTeX.	environment that are
						suitable for the
						applications under
						consideration.
						Compute vectors and
						matrices, matrix
						inverse, eigen values
						and eigen vectors.

M. Sc.	PEMAF20	Elective	To design and program	Attain an in-depth	Have the capability	Implement programs
Mathematics		Practical: Java	stand-alone Java	knowledge in the	to apply the	with classes.
			applications.	respective domains	programming	Write programs that
				augmented through	concepts of JAVA,	perform operations
				self- learning.	MATLAB, and R	using arrays.
				Assimilate and apply	language to model,	Develop the program
				principles and	formulate and solve	by decision making
				concepts towards	real-life problems.	statements and solve
				skill development	Inculcate research-	problems based on it.
				and employability.	level thinking in the	Illustrate basic
					field of pure and	programming
					applied mathematics	concepts such as
					and apply theoretical	program flow and
					knowledge to write	syntax of a high-level
					the dissertation using	general purpose
					the Mathematical	language.
					software LaTeX.	Take a problem,
						figure out the
						algorithm to solve it
						and write the code.
M. Sc.	PEMAH20	Elective	To use R for descriptive	Attain an in-depth	Have the capability	Familiarize with
Mathematics		Practical: R	statistics and write simple	knowledge in the	to apply the	basics of R software
			programs in R.	respective domains	programming	and built in function
				augmented through	concepts of JAVA,	of R.
				self- learning.	MATLAB, and R	Identify the
				Assimilate and apply	language to model,	characteristics of
				principles and	formulate and solve	datasets and plot the

				concepts towards	real-life problems.	datasets in R using
				skill development	Inculcate research-	graphical methods.
				and employability.	level thinking in the	Demonstrate
					field of pure and	understanding and use
					applied mathematics	data frames.
					and apply theoretical	Implement the
					knowledge to write	learning techniques
					the dissertation using	and computing
					the Mathematical	environment that are
					software LaTeX.	suitable for the
						applications under
						consideration.
						Compute vectors and
						matrices, matrix
						inverse, eigen values
						and eigen vectors.
M. Sc.	PIMAE20	Independent	To develop in-depth	Attain an in-depth	Acquire profound	Utilize the basics of
Mathematics		Elective 3 A:	knowledge in analysis and	knowledge in the	knowledge in	set theory and number
		Skill	problem-solving skills to	respective domains	Mathematics to	system.
		Enhancement in	work out unsolved	augmented through	develop a range of	Acquire the
		Real and	problems using various	self- learning.	generic skills to	knowledge of
		Complex	tricks to clear CSIR NET,	Assimilate and apply	qualify for the	Sequences and Series.
		Analysis - I	SET, JRF, and GATE	principles and	fellowship	. Compute the Limit,
			examinations. Also, to	concepts towards	examinations	Continuity and
			train the students in self-	skill development	approved by UGC	Differentiation of
			paced independent	and employability.	like CSIR-NET, JRF,	functions.
			learning.		GATE, and SET.	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 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.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Have the capability to apply the programming concepts of JAVA, MATLAB, and R language to model, formulate and solve real-life problems. Inculcate research-level thinking in the field of pure and	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 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.	applied mathematics and apply theoretical knowledge to write the dissertation using the Mathematical software LaTeX. Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Develop a deep interest in Advanced Mathematics and have the capability to understand the outcomes in various branches of Mathematics. Have the capability to apply the programming	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, selfadjoint, unitary and normal.
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					MATLAB, and R	properties of Banach

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			language to model,	Algebra and the
			formulate and solve	spectrum of an
			real-life problems.	element in a Banach
			Acquire profound	algebra.
			knowledge in	Represent
			Mathematics to	commutative Banach
			develop a range of	algebras as algebras of
			generic skills to	continuous functions.
			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.	
			Bootai needs.	

M. Sc.	PCMAN20	Calculus of	To develop an	Attain an in-depth	Attain in-depth	Understand the
Mathematics		Variations	understanding of	knowledge in the	knowledge in Pure	functional and its
			variational problems with	respective domains	Mathematics through	applications. Also use
			fixed boundaries and	augmented through	theorems and	the Euler-Lagrange
			moving boundaries.	self- learning.	Applied Mathematics	equation to find the
				Assimilate and apply	using real-life	differential equations
				principles and	examples and	for stationary paths.
				concepts towards	simulation results.	Describe Du Bois-
				skill development	Develop a deep	Reymond problem
				and employability.	interest in Advanced	and solve it.
					Mathematics and	Solve differential
					have the capability to	equations for
					understand the	stationary paths
					outcomes in various	subject to boundary
					branches of	conditions.
					Mathematics.	Give an account of the
					Have the capability	foundations of
					to apply the	calculus of variations
					programming	and its applications in
					concepts of JAVA,	Mathematics and
					MATLAB, and R	Physics.
					language to model,	Apply direct methods
					formulate and solve	to solve variational
					real-life problems.	problems.
					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	
					to compete at the global level and meet	
M. Sc. Mathematics	PCMAO20	Mathematical Statistics	To impart knowledge of statistics in various areas and to apply problemsolving 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	social needs. Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results.	Understand the sample moments and their functions and analyze chi-square, Student-t, Fishers-Z distributions. Demonstrate the knowledge of the

			1
	skill development	Develop a deep	properties of
	and employability.	interest in Advanced	parametric testing
		Mathematics and	procedures.
		have the capability to	.Construct tests and
		understand the	estimators, and derive
		outcomes in various	their properties.
		branches of	Estimate population
		Mathematics.	parameters from data
		Have the capability	sets and use the
		to apply the	sampling distributions
		programming	to compute confidence
		concepts of JAVA,	intervals for these
		MATLAB, and R	population
		language to model,	parameters.
		formulate and solve	Learn the basic
		real-life problems.	components of
		Acquire profound	hypothesis testing and
		knowledge in	perform hypothesis
		Mathematics to	test on population
		develop a range of	means.
		generic skills to	. Understand the basic
		qualify for the	terms used in design
		fellowship	of experiments and
		examinations	use appropriate
		approved by UGC	experimental designs
		like CSIR-NET, JRF,	to analyze the
		GATE, and SET.	experimental data.

					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	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.	Attain in-depth knowledge in Pure Mathematics through theorems and Applied Mathematics using real-life examples and simulation results. Develop a deep interest in Advanced Mathematics and have the capability to understand the outcomes in various branches of Mathematics.

: Have the capability to apply the programming concepts of JAVA, MATLAB, and R language to model, formulate and solve real-life problems. Acquire profound knowledge in Mathematics to develop a range of generic skills to qualify for the fellowship examinations approved by UGC like CSIR-NET, IRF, GATE, and SET. Develop teaching, research, and technical skills in Mathematics for	
programming concepts of JAVA, MATLAB, and R language to model, formulate and solve real-life problems. 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	
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GATE, and SET. Develop teaching, research, and technical skills in Mathematics for	
Develop teaching, research, and technical skills in Mathematics for	
research, and technical skills in Mathematics for	
technical skills in Mathematics for	
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.	PEMAI20	Elective IV A:	To understand the graph	Attain an in-depth	Attain in-depth	Identify subgraphs,
Mathematics		Graph Theory	theoretical concepts that	knowledge in the	knowledge in Pure	cycles, paths and
			can model and study many	respective domains	Mathematics through	connection in graphs.
			real-world problems	augmented through	theorems and	Analyse the cut
			which can be applied in a	self- learning.	Applied Mathematics	vertices, cut edges and
			wide range of disciplines	Assimilate and apply	using real-life	bonds in trees.
			and in the area of research.	principles and	examples and	Distinguish between
				concepts towards	simulation results.	the Hamiltonian and
				skill development	Develop a deep	Eulerian graph.
				and employability.	interest in Advanced	Explain the concepts
					Mathematics and	of matchings and
					have the capability to	coverings in bipartite
					understand the	graphs.
					outcomes in various	Understand the
					branches of	concepts of coloring
					Mathematics.	and planar graphs.
					: Have the capability	
					to apply the	
					programming	
					concepts of JAVA,	
					MATLAB, and R	
					language to model,	

	formulate and solve
	real-life problems.
	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.	PEMAJ20	Elective IV B:	To make use of a special	Attain an in-depth	Attain in-depth	Distinguish between
Mathematics		Fuzzy Set	fuzzy set to model reality	knowledge in the	knowledge in Pure	crisp set and fuzzy set
		Theory	better than traditional	respective domains	Mathematics through	through bi-valued
			theories and to develop a	augmented through	theorems and	logic and infinite-
			research approach that can	self- learning.	Applied Mathematics	valued logic.
			deal with problems	Assimilate and apply	using real-life	Know about the most
			relating to ambiguous	principles and	examples and	widely used standard
			situations.	concepts towards	simulation results.	fuzzy set operations.
				skill development	Develop a deep	Formulate the fuzzy
				and employability.	interest in Advanced	number which is a
					Mathematics and	special case of a
					have the capability to	convex, normalized
					understand the	fuzzy set of the real
					outcomes in various	line.
					branches of	Explore the fuzzy
					Mathematics.	relation and its
					Have the capability	operations which is
					to apply the	the generalization of
					programming	crisp relation.
					concepts of JAVA,	Analyze the methods
					MATLAB, and R	of decision making in
					language to model,	fuzzy environment
					formulate and solve	and their applications
					real-life problems.	in LPP.
					Acquire profound	
					knowledge in	
					Mathematics to	

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					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.	PIMAG20	Independent	Understand the basic	Attain an in-depth	Acquire profound	Analyze the theory of
Mathematics		Elective 4 A:	concepts of the research	knowledge in the	knowledge in	Partial derivatives.
		Skill	methodology to analyze	respective domains	Mathematics to	Compute Riemann
		Enhancement in	real-life problems using	augmented through	develop a range of	Sum and Riemann
		Real and	Statistical concepts. Also,	self- learning.	generic skills to	integral.
		Complex	to train the students in	Assimilate and apply	qualify for the	Evaluate the concepts
		Analysis - II	self-paced independent	principles and	fellowship	of Lebesgue measure
			learning.	concepts towards	examinations	and Lebesgue integral.

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				skill development	approved by UGC	Identify the
				and employability.	like CSIR-NET, JRF,	Connectedness and
					GATE, and SET.	Compactness.
						. Calculate the
						Residues of functions
						and improve the
						knowledge of
						conformal mappings.
M. Sc.	PIMAH20	Independent	Understand the basic	Attain an in-depth	Attain in-depth	Analyze the needs
Mathematics		Elective 4 B:	concepts of the research	knowledge in the	knowledge in Pure	and purpose of
		Fundamentals of	methodology to analyze	respective domains	Mathematics through	Experimental design.
		Research	real-life problems using	augmented through	theorems and	Prepare and Analyze
		Methodology	Statistical concepts. Also,	self- learning.	Applied Mathematics	the Questionnaire and
		and Statistics -	to train the students in	Assimilate and apply	using real-life	compute the Statistical
		II	self-paced independent	principles and	examples and	analysis of data.
			learning.	concepts towards	simulation results.	. Analyze the
				skill development	Have the capability	statistical data and
				and employability.	to apply the	research report.
					programming	Acquire the
					concepts of JAVA,	knowledge of Action
					MATLAB, and R	research and
					language to model,	Educational research.
					formulate and solve	. Understand the basic
					real-life problems.	measures of
					Inculcate research-	variability, dispersion
					level thinking in the	and correlation.
					field of pure and	

M.Sc. Physics	РСРНА20	Mathematical	Inculcate the mathematical	Assimilate and apply	applied mathematics and apply theoretical knowledge to write the dissertation using the Mathematical software LaTeX. Understand the	Solve ordinary
		Physics – I	concepts for solving problems.	principles and concepts towards skill development and employability Apply critical and scientific approaches to address problems and find solutions.	various methods in the respective field. Gain knowledge about various applications	differential equations that are common in the physical-sciences. Understand the characteristics of special functions to solve the physical problems.
M.Sc. Physics	PCPHB20	Classical Mechanics	To gain knowledge about the fundamental principles of small theory of oscillations and its applications.	Assimilate and apply principles and concepts towards skill development and employability. Apply critical and scientific approaches to address problems and find solutions.	Inculcate the mathematical concepts for solving problems Gain knowledge about various applications.	Acquire knowledge about the fundamental concepts of dynamics of system of particles Use D'Alembert's principle and calculus of variations to derive the Lagrange - Hamilton formalism applicable to solve the equation of motion for any mechanical

						system
						Understand the
						essential features of
						canonical
						transformations and
						their applications to
						various systems.
						Describe the
						Hamilton-Jacobi
						equation and develop
						the skills to use them
						to set and solve the
						appropriate physical
						problems.
						Gain knowledge about
						the fundamental
						principles of small
						theory of oscillations
						and its applications.
M.Sc. Physics	PCPHC20	Statistical	To understand the	Attain an in-depth	Attain in depth	Differentiate classical
		Mechanics	fundamental principles of	knowledge in the	knowledge on	and quantum
			thermodynamics and	respective domains	various areas of	statistics, explain the
			statistical mechanics to	augmented through	Physics.: Inculcate	statistical behaviour of
			perform a quantitative	self-learning.	the mathematical	ideal system
			calculations on ideal	Integrate issues of	concepts for solving	(Maxwell, Bose &
			systems.	social relevance in	problems.	Fermi) and calculate
				the field of		the statistical

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				study.Persist in life-		quantities. Apply the
				long learning for		Bose-Einstein and
				personal and societal		Fermi-Dirac
				progress.		distributions
						appropriately to
						understand the
						macroscopic
						properties. (Black
						body radiation,
						electrons in metals,
						Para magnetism etc.)
M.Sc. Physics	PEPHA20	Elective I A:	Analyze about the	Apply critical and	Understand the	To study the Timer
		Electronic	fabrication of various	scientific approaches	various methods in	IC and its
		Devices and	Integrated circuits and	to address problems	the respective field.	applications.
		Applications	semiconductor devices	and find solutions.		To know the
						principles,
						configuration, linear
						and non-linear
						applications of Op-
						circuits.
						To understand the
						concepts of
						combinational circuits
		1			1	1
						applications of Opamp used to design various digital circuits. To understand the concepts of

						converters used to
						design advanced
						digital system.
M.Sc. Physics	PCPHD20	Mathematical	To inculcate to the	Attain an in-depth	Attain in depth	Apply concepts of
		Physics – II	students the mathematical	knowledge in the	knowledge on	complex analysis to
			concepts for solving	respective domains	various areas of	evaluate definite
			physical problems which	augmented through	Physics.	integrals.
			arise in many branches of	self-learning.	Understand the	Explain various
			Physics.	Assimilate and apply	various methods in	operations of tensors
				principles and	the respective field.	and apply in many
				concepts towards	Inculcate the	branches of science.
				skill development	mathematical	Apply Laplace/Fourier
				and employability.	concepts for solving	transforms to solve
				Apply critical and	problems.	mathematical
				scientific approaches	Become Skilled to	problems and use
				to address problems	face competitive	Fourier transforms as
				and find solutions.	examinations.	an aid for analysing
						experimental data
M.Sc. Physics	PCPHE20	Electromagnetic	To make the students	Develop research	Understand the	Able to understand
		Theory	understand the principles	skills through	various methods in	and apply the basic
			and theory of	multi/inter/trans-	the respective field.	principles of
			electrostatics, magneto	disciplinary	Become Skilled to	electrostatics.
			statics.	perspectives.	face competitive	Imbibes the wide-
					examinations.	spread knowledge
						about radio
						communication with
						its mathematical

						applications.
M.Sc. Physics	PCPHF20	Quantum	To impart knowledge	Assimilate and apply	Understand the	Apply the concept of
		Mechanics – I	about Quantum mechanics	principles and	various methods in	Quantum mechanics
			based on dual nature of	concepts towards	the respective field.	to various problems.
			material particles, various	skill development	Gain knowledge	Attain knowledge
			applications, finding	and employability	about various	about various
			solutions to problems	Apply critical and	applications	approximation
			using different	scientific approaches		methods and their
			approximation methods.	to address problems		applications.
				and find solutions.		
M.Sc. Physics	PEPHC20	Elective II A:	To learn the basic	Persist in life-long	Understand the	Explain the
		Crystal Growth,	concepts in research	learning for personal	various methods in	fundamental concepts
		Nano Science	methodology for pursuing	and societal progress.	the respective field.	behind in the
		and Research	future research work.		Attain interest for	formation of crystal.
		Methodology			higher education and	Understand the
					research	advanced methods of
						characterization
						instruments for crystal
						and nanomaterials.
						Provide a broad view
						of various approaches
						for the synthesis and
						fabrication of
						nanostructures and
						their outstanding
						properties useful to
						carry out their project

						and research work.
M.Sc. Physics	PCPHI20	Spectroscopy	To impart the knowledge	Attain an in-depth	Attain in depth	Describe theoretical
			about molecular	knowledge in the	knowledge on	background (classic
			spectroscopic techniques.	respective domains	various areas of	and quantum) of
				augmented through	Physics.	spectroscopic
				self-learning.	Gain knowledge	techniques such as
				Develop research	about various	microwave, IR and
				skills through	applications.	Raman, NMR, NQR,
				multi/inter/trans-	Attain interest for	ESR and Mossbauer
				disciplinary	higher education and	spectroscopy.
				perspectives.	research.	Apply solutions of
						the Schrodinger
						equations for simple
						systems (rigid rotor
						and harmonic
						oscillator) to real
						systems (rotational
						and vibrational) for
						use in determining the
						molecular energy
						levels.
M.Sc. Physics	PCPHJ20	Quantum	To impart knowledge	Apply critical and	Understand the	Attain Knowledge
		Mechanics –II	about various theories and	scientific approaches	various methods in	about relativistic
			relativistic equations	to address problems	the respective field	Quantum Mechanics
			related to Quantum	and find solutions	Gain knowledge	
			Mechanics.		about various	
					applications	

M.Sc. Physics	PCPHK20	Microprocessor	To make the students	Attain an in-depth	Attain in depth	Describe Hardware,
		and Micro-	understand the concepts	knowledge in the	knowledge on	different bus cycles
		controller	that are involved in the	respective domains	various areas of	and memory interface
			Microprocessor 8085 and	augmented through	Physics.	to 8085
			Microcontroller 805	self-learning	Understand the	Microprocessor.
					various methods in	Develop programs
					the respective field.	using 8085
					Gain knowledge	Microprocessor
					about various	Instruction set and
					applications.	addressing modes.
						Describe and perform
						different types of
						peripheral interfaces
						to 8085
						Microprocessor.
						Explain hardware,
						instruction set and
						addressing modes of
						Microcontroller 8051
						and develop
						programming for
						basic operations.
						Describe and perform
						different types of
						external interfaces to
						8051 Microcontroller.

M.Sc. Physics	PEPHE20	Elective III A:	To impart the knowledge	Attain in depth	Attain an in-depth	Understand and apply
		Numerical	of numerical methods for	knowledge on	knowledge in the	numerical concepts to
		Methods and C	solving problems arise in	various areas of	respective domains	solve equations and
		Programming	physics and to equip the	Physics.	augmented through	find missing values
			students with the skill of C	Understand the	self-learning.	for any physical
			language.	various methods in		problems
				the respective field.		Solve ordinary
				Inculcate the		differential equations
				mathematical		using numerical
				concepts for solving		techniques
				problems.		Understand the basic
				Gain knowledge		concepts of C
				about various		Language
				applications.		Understand and use
						various operators and
						arrays in C Language
						Develop simple
						programs using C
						language along with
						computational tools
M.Sc. Physics	PCPHL20	Material Science	To impart knowledge	Apply critical and	Understand the	Learn the basic
		and Laser	about phase diagram and	scientific approaches	various methods in	principles of optical,
		Physics	defects in crystals	to address problems	the respective field.	Dielectric and Ferro
				and find solutions.	Attain interest for	Electric properties of
					higher education and	materials
					research	To understand the
						principle and working

						of Lasers
M.Sc. Physics	PCPHM20	Nuclear Physics	To impart knowledge	Attain an in-depth	Attain in depth	Apply core concepts
		and Particle	about nuclear-	knowledge in the	knowledge on	in physics to
		Physics	interactions, reactions,	respective domains	various areas of	understand nuclear
			models and basic concepts	augmented through	Physics. Understand	interactions, features
			in elementary particles.	self-learning.	the various methods	of nuclear reactions
				Develop research	in the respective	and characteristics of
				skills through	field.: Inculcate the	radioactive decays
				multi/inter/trans-	mathematical	(beta & gamma).
				disciplinary	concepts for solving	Describe basic nuclear
				perspectives.	problems. Attain	structure and nuclear
					interest for higher	properties by applying
					education and	the mathematical
					research.	theory and models
						(liquid drop model,
						Shell model,
						collective model,
						optical model etc.)
						Evaluate some basic
						nuclear parameters
						such as radius, BE, Q-
						value, nuclear spin,
						parity etc. Classify
						elementary particles
						(based on interactions
						and spin) and explain
						the fundamental

M.Sc. Physics	PCPHN20	Condensed Matter Physics	To get familiarized with the different parameters associated with superconductivity and the theory of superconductivity.	Attain an in-depth knowledge in the respective domains augmented through self-learning.	Attain in depth knowledge on various areas of Physics. Understand the various methods in the respective field.	concepts in particle physics (conservation laws, parity violation, interactions etc.) Study the substructure and symmetries in elementary particles (SU (2) &SU (3)); apply Quark model to find the missing particle. To relate crystal structure to symmetry, recognize the correspondence between real and reciprocal space. To develop an understanding of the dielectric properties and ordering of dipoles in ferroelectrics. To get familiar
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M.Sc. Physics	PEPHG20	Elective IV A:	To make the students	Attain an in-depth	Attain in depth	Understand the basic
		Fiber Optics and	understand the concepts of	knowledge in the	knowledge on	principles and
		Non-Linear	fiber optics, Nonlinear	respective domains	various areas of	concepts in optical
		Optics	optics and their	augmented through	Physics. Gain	fiber and describe the
			applications.	self-learning.	knowledge about	properties of optical
				Integrate issues of	various applications	sources. Distinguish
				social relevance in		between the various
				the field of study		types and the
						characteristics of
						optical fiber.
						Analyze and
						comparing the
						different fabrication
						process of fiber.
						Describe various
						losses and connectors
						in optical fiber.
						Understand non-linear
						effects in optical fiber
						and their applications.
M.Sc. Physics	PEPHB20	Elective I B:	To make the students	Apply critical and	Gain knowledge	Understand the
		Electronic	acquire knowledge about	scientific approaches	about various	orbital and functional
		Communication	electronic communication	to address problems	applications.	principles of satellite
		Systems.	systems.	and find solutions.		communication
				Develop research		systems.
				skills through		Understand the
				multi/inter/trans-		evolution of cellular

				disciplinary		communication
				perspectives.		systems up to and
						beyond 3G.
						Understand
						fundamentals of
						wireless
						communications.
M.Sc. Physics	PIPHB20	IEP: Astro	To make the students	Attain an in-depth	Attain in depth	Detail the main
		Physics	acquire the knowledge	knowledge in the	knowledge on	features and formation
			about the universe	respective domains	various areas of	theories of the various
				augmented through	Physics.	types of observed
				self-learning. Apply	Understand the	galaxies, in particular
				critical and scientific	various methods in	the Milky Way
				approaches to address	the respective field.	
				problems and find	Attain interest for	
				solutions.	higher education and	
					research.	
M.Sc. Physics	PEPHD20	Elective II	To gain knowledge about	Apply critical and	Understand the	Attain the knowledge
		B:.Electronic	electronic equipment's.	scientific approaches	various methods in	of working principle
		Instrumentation		to address problems	the respective field.	of digital instruments
				and find solutions.	Gain knowledge	(digital pH meter,
					about various	digital storage
					applications.	oscilloscope, digital
						multimeter etc.,)
						Impart the knowledge
						in working of Bio
						medical instruments

						and its applicable to find out any defects in our human body and to save our life.
M.Sc. Physics	PIPHD20	IEP: Medical Physics and Instrumentation Techniques	To give a perspective about the concepts of physics involved in human body.	Apply critical and scientific approaches to address problems and find solutions.	Apply critical and scientific approaches to address problems and find solutions.	Explain the effect of pressure on human system. Explain the physics of lungs and respiratory system. Explain the physics of cardiovascular system.
M.Sc. Physics	PEPHF20	Elective III B: Advanced Optics	To provide the knowledge on optics for higher studies.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Develop research skills through multi/inter/transdisciplinary perspectives.	Attain in depth knowledge on various areas of Physics. Understand the various methods in the respective field. Attain interest for higher education and research.	Understand the basic concepts of Laser theory Understand and describe the different types of Laser Explain the propagation of Laser beam Describe the principle, types and loss of optical fiber Understand the

						importance of nonlinear optics and apply the concepts of NLO to optical materials.
M.Sc. Physics	PIPHF20	IEP: Numerical Methods & Research Methodology	To impart knowledge of various concepts involved in numerical analysis	Attain an in-depth knowledge in the respective domains augmented through self-learning. Apply critical and scientific approaches to address problems and find solutions.	Inculcate the mathematical concepts for solving problems. Become Skilled to face competitive examinations. Attain interest for higher education and research	Understand and apply numerical concepts to solve equations and evaluate any integrals. Draw a good research report and impart research communication techniques
M.Sc. Physics	РЕРНН20	Elective IV B: Advanced Material Science	To impart knowledge about crystallography and wide knowledge about properties of materials.	Attain an in-depth knowledge in the respective domains augmented through self-learning. Develop research skills through multi/inter/transdisciplinary perspectives	Attain in depth knowledge on various areas of Physics. Attain interest for higher education and research	Understand the building unit of structure of crystal and their symmetry. Interpret about the magnetic properties and effects on materials Attain the knowledge of superconducting materials and problem solving.

M.Sc. Physics	PIPHH20	IEP: Advanced Nuclear Physics & Spectroscopy	To impart knowledge of nucleus-based instruments and familiarize with various spectroscopic techniques.	Attain an in-depth knowledge in the respective domains augmented through self-learning.	Attain in depth knowledge on various areas of Physics. Understand the various methods in the respective field. Attain interest for higher education and research.	Pick up the ideas in lasing action, optical resonators and its applications. Get introduced all about smart, nano and magnetic materials and its Application useful to carry out the research work and fabricating the devices for public utility. Explain the basic concepts of nuclear detectors and particle accelerators. Explain the basic aspects of astrophysics. Explain the principles, working and application of nuclear spectroscopic techniques (RBS, NAA, PIXE) and other applications of nuclear physics.
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M.Sc. Zoology	PCZOA20	Phylogeny of Invertebrates and Chordates.	Enable the Students to understand and appreciate the biodiversity and its phylogenetic diversity.	Attain an in-depth knowledge in the respective domains augmented through self-learning.	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 basic principles, instrumentation and applications of UV spectroscopy. Explain the basic principles, instrumentation and applications of atomic absorption and emission spectroscopy. Analyze the taxonomic status of Invertebrates, its origin and Evolution Categorize Respiratory, Circulatory and Urinogenital system of various classes of vertebrates. Justify adaptive radiations of annelids, mollusks, Pisces, amphibians and mammals. Explain salient
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						features of invertebrate and chordates. Distinguish structural, functional and phylogenetic significance of minor phyla.
M.Sc. Zoology	PCZOB20	Molecular Biology and Genetics.	Enable to understand and apply the fine structure of gene and its function.	Apply critical and scientific approaches to address problems and find solutions.	Be technically sound in applying the Information technology and will be lifelong learners in updating to the current advancements in their respective fields.	Expand knowledge of DNA, RNA structure and understand their synthesis process. Summarize transcription and translation concepts. Describe transcriptional modification mechanism. Interpret various genetic disorders and genetic variation in metabolism. Discuss genetic recombination and analyze genetic concepts.

M.Sc. Zoology	PCZOC20	Applied	Apply the concepts of	Integrate issues of	Conduct their duty	Explain the benefits
		Biotechnology	Microbiology and	social relevance in	with at most honesty	of microbes in
		and	Biotechnology in various	the field of study.	and adhere to ethical	production and value
		Microbiology.	fields.		protocols. On the	addition of food
					whole, be agents of	products.
					social transformation	Apply the tools and
					to up bring their	techniques used in
					society at large.	molecular biology.
						Solve the problems
						related to
						biotechnology keeping
						in mind the safety
						factor for environment
						and society.
						Discuss the basic
						techniques used in
						genetic manipulation.
						Biosafety and ethical
						issues.
						Explain transgenic
						animals and their use
						in research field.
M.Sc. Zoology	PEZOA20	Elective I A:	Research Applications of	Apply critical and	Be technically sound	Describe statistical
		Biostatistics and	Biostatistics and	scientific approaches	in applying the	population, sampling
		Computational	databases.	to address problems	Information	and probability.
		Biology		and find solutions.	technology and will	Explain and perform
					be lifelong learners	standard deviation,

	M.Sc. Zoology	PEZOB20	Elective I B: Computational Methods for sequence analysis	Research Applications of Biological databases.	Apply critical and scientific approaches to address problems and find solutions.	in updating to the current advancements in their respective fields. Be technically sound in applying the Information technology and will be lifelong learners in updating to the current advancements in their respective fields.	Student t test and Chasquare Test. Compute Correlation Regression and ANOVA. Discuss the database and application of search tools. Explain genomics, proteomics, drug designing and phylogenetic tree analysis. Explain and classify the biological databases and its application. Describe the sequence alignment, substitution matrices and score matrices are search tools. Analyze the evolutionary distance and boot strapping
strategies.							and boot strapping

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						sequences, gene
						finding and analyses
						the regulatory regions.
						Explain the secondary
						structure and gene
						identification.
M.Sc. Zoology	PIZOB20	Independent	Enable the students to	Develop research	Gain ability to	Recall the basic
		Elective IB:	understand the basic	skills through	develop research	concepts of
		Biophysics	principles of biophysics	multi/inter/trans-	aptitude/creative	Biophysics.
			and advanced	disciplinary	thinking in	Describe and apply
			methodologies in research	perspectives.	contemporary and	the law of
					current fields of	thermodynamics of
					interest.	the biological system
						and concepts of
						energy
						Explain the
						membrane
						conductivity and
						transport.
						Explain the principle
						techniques and
						application of lasers in
						biomedical field.
						Discuss the working
						principle,
						instrumentation and
						applications of bio-

						analytical instruments.
M.Sc. Zoology	PEZOC20	Elective II A: Biochemistry	Enable the students to understand the biological macromolecules like proteins, carbohydrates, lipids, vitamins and enzyme action.	Apply critical and scientific approaches to address problems and find solutions.	Gain ability to develop research aptitude/creative thinking in contemporary and current fields of interest.	Explain the atom and types of bonds and buffers. Explain the properties of water body fluids its biological function and Classification of Amino acids. Appraise the classification, properties and mode of action of Protein and Enzyme. Summarize the complexity of the carbohydrate metabolism. Categorize the Vitamins and its importance.

M.Sc. Zoology	PEZOD20	Elective II B:	Enable the students to	Develop research	Gain ability to	Discuss hormones its
		Endocrinology	discuss the classification	skills through	develop research	classification and
			and functions of endocrine	multi/inter/trans-	aptitude/creative	function, the anatomy
			glands	disciplinary	thinking in	of endocrine glands,
				perspectives.	contemporary and	Explain Pituitary and
					current fields of	Parathyroid Structure
					interest.	and Function.
						Comprehensive
						knowledge about
						structure and function
						of Pancreas and
						Adrenal glands.
						Describe the
						complexity of the
						endocrine system of
						invertebrates.
						CLO5: Elucidate
						hormones in
						development.
M.Sc. Zoology	PCZOK20	Animal	Enable to understand the	Attain an in-depth	Have in-depth	Discuss the innate,
		Behaviour	normal and abnormal	knowledge in the	knowledge on animal	acquired and group
			behaviour and apply it in	respective domains	diversity from	behaviors.
			the field.	augmented through	acellular to	Explain the habitat
				self-learning.	multicellular level of	selection and foraging
					organization and	methods of animals.
					apply the learnt	Compute the
					concepts in all the	interspecific

					fields of Zoology.	behaviors.
						Explain about
						communication in
						animals.
						Analyze Social
						behaviors in animals.
M.Sc. Zoology	PCZOM20	Physiology and	Enable the students to	Attain an in-depth	Have in-depth	Expand knowledge
		Endocrinology	understand the interactions	knowledge in the	knowledge on animal	about the enzymes,
			between the organ systems	respective domains	diversity from	digestive system and
			and apply the same in	augmented through	acellular to	interaction of complex
			research.	self-learning.	multicellular level of	metabolic pathway,
					organization and	respiration and the
					apply the learnt	adaptation at extreme
					concepts in all the	conditions.
					fields of Zoology.	Summarize the
						circulatory and
						excretory system with
						its structure, function
						and regulatory
						mechanism.
						Discuss the muscular
						and nervous system
						structure, function and
						regulation.
						Describe hormones
						its classification and
						function, the anatomy

						of endocrine glands.
						Interpret endocrine
						system with its
						function and
						regulation in
						reproduction.
M.Sc. Zoology	PCZON20	Developmental	Help the students to	Attain an in-depth	Have in-depth	Explain the chemo
		Biology and	understand process of	knowledge in the	knowledge on animal	differentiation in the
		Immunology	development and recent	respective domains	diversity from	egg during
			advancements.	augmented through	acellular to	development.
				self-learning.	multicellular level of	Describe the organizer
					organization and	and cellular
					apply the learnt	differentiation, genetic
					concepts in all the	defects, aging
					fields of Zoology.	regeneration and
						teratogenesis.
						Discuss the various
						forms of asexual
						reproduction, artificial
						fertilization and stem
						cells.
						Summarize the cells
						of Immune system and
						immune response.
						Explain the
						importance of immune
						therapy in treatment of

						diseases.
M.Sc. Zoology	PCZOO20	Evolution	Demystify the process and	Attain an in-depth	Have in-depth	Analyse the evidences
			changes in evolution of	knowledge in the	knowledge on animal	of evolution, and
			life.	respective domains	diversity from	importance of
				augmented through	acellular to	paleontology.Compare
				self-learning.	multicellular level of	the evolutionary
					organization and	theories, trends and
					apply the learnt	mechanism of
					concepts in all the	evolution.Justify the
					fields of Zoology.	adaptations for
						successful
						continuation of life
						and extinction.
						Appraise the
						distribution of animals
						and geological
						timescale.Explain the
						Human origin and
						evolution.
M.Sc. Zoology	PIZOH20	Independent	Apply the concepts of	Integrate issues of	Conduct their duty	Explain Psychology
		Elective IVB:	Psychology in Field Study	social relevance in	with at most honesty	and its branches.
		General		the field of study.	and adhere to ethical	Define concept of self
		Psychology			protocols. On the	and describe the
					whole, be agents of	theories of
					social transformation	Personality.
					to up bring their	Discuss the need of
					society at large.	social psychology.

M.Sc. Microbiology	PCMBB20	Food, Agriculture and Environmental Microbiology	The syllabus deigned makes the learners familiarize on Food, Agriculture and	Attain an in-depth knowledge in the respective domains augmented through	Acquaint a broader knowledge in the concepts of Taxonomy,	Explain Psychopathology. Apply the knowledge of psychology in different areas like forensic, family, court etc. Analyse the principles in food preservation. Communicate
		Wherobiology	Environmental aspects of Microbiology	self-learning.	molecular biology, immunology, food, environment and agricultural Microbiology, nanotechnology, forensic science and genetic engineering.	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.	PCMBC20	Immunology	The course is designed to	Attain an in-depth	Acquaint a broader	Outline the types of
Microbiology		and	provide in depth	knowledge in the	knowledge in the	immune response and
		Immunotechnol	knowledge on immune	respective domains	concepts of	discuss the role of
		ogy	cells, immune system- its	augmented through	Taxonomy,	lymphoid organs in
			function and hybridoma	self-learning.	molecular biology,	immunity.
			technology		immunology, food,	Compile
					environment and	immunoglobulins and
					agricultural	antigens.
					Microbiology,	Communicate the
					nanotechnology,	importance of MHC in
					forensic science and	organ transplantation.
					genetic engineering.	Analyse the allergic
						responses by the
						immune system
						leading to
						hypersensitive
						conditions and auto
						immune disorders.
						Plan immunization
						schedule.
M.Sc.	PEMBA20	Petroleum	The syllabus is framed to	Attain an in-depth	Attain an in-depth	Outline the
Microbiology		Microbiology	provide an in depth	knowledge in the	knowledge in the	importance of
			understanding on the	respective domains	anatomy and	petroleum
			microbial communities	augmented through	physiology of a	Microbiology and
			residing in the oil	self-learning.	repertoire of	predict the impact of
			reservoirs and other		microorganisms with	the microbial
			hydrocarbon resource		its beneficial and	communities in

			environments.		harmful associations.	various petroleum
						fields.
						Design the microbial
						solutions to the
						Microbiology related
						problems in the
						petroleum industry.
						Discuss solutions to
						enhance production of
						oil/energy by applying
						concepts of
						production related
						petroleum
						Microbiology. Utilize
						biotechnological
						aspects in remediation
						of oil spills.
						Use apparatus for the
						detection of living
						microbial
						contaminants in
						petroleum products.
M.Sc.	PEMBB20	Economic	The syllabus is designed	Develop research	Incorporate effective	Utilize
Microbiology		Microbiology	to introduce	skills through	career with	microorganisms as
			entrepreneurial skills	multi/inter/trans-	marketing, project	biofertilizers and for
			among students to become	disciplinary	management,	vermicomposting.
			entrepreneurs and to make	perspectives.	business	Analyse microbial

M.Sc.	PIMBA20	Public Health	their idea a reality. The syllabus is designed	Attain an in-depth	development or venture capital within the biotech, pharmaceutical, medical technology or related fields. Attain an in-depth	cells as fermented products. Use yeast in and as food and feed. Demonstrate mushroom cultivation and its storage. Discuss biotechnological applications of microalgae. Explain the
Microbiology		Microbiology	to provide in depth knowledge about	knowledge in the respective domains	knowledge in the anatomy and	significance of public health. Communicate
			significance of public	augmented through	physiology of a	the mode of
			health at theoretical and	self-learning.	repertoire of	transmission of human
			practical levels.		microorganisms with	diseases.
					its beneficial and	Discuss the role of
					harmful associations.	medically important
						pathogens and the diseases caused.
						Outline the vector
						complex interactions
						between the pathogens
						and host.
						Create awareness on
						hospital-acquired

						applications.
M.Sc.	PCMBO20	Textile and	The course is designed to	Assimilate and apply	Demonstrate	Utilize the techniques
Microbiology		cosmetic	provide hands-on training	principles and	practical skills in the	for decolorization of
		Microbiology	and acquire adequate skill	concepts towards	use of tools,	textile industrial
			required for testing the	skill development	technologies and	waste.
			quality of cosmetics and	and employability.	methods common to	Estimate of BOD,
			textile materials.		Microbiology, and	COD and total solids
					apply the scientific	in effluent sample.
					method and	Demonstrate the
					hypothesis testing in	antimicrobial activity
					the design and	of textile materials.
					execution of	Evaluate the
					experiments.	antifungal property of
						treated textile
						materials.
						Enumerate
						microorganisms in
						cosmetics, perfumes
						and essential oils.
M.Sc.	PIMBB20	Forensic	The course is designed to	Integrate issues of	Acquaint a broader	Evaluate the methods
Microbiology		Science	provide understanding of	social relevance in	knowledge in the	underpinning forensic
			the scientific principles of	the field of study.	concepts of	science, from crime
			crime scene investigation		Taxonomy,	scene investigation to
			and reconstruction,		molecular biology,	report evidential value
			including evidence		immunology, food,	within a case.
			collection and		environment and	Reflect on the use of
			preservation.		agricultural	various divisions of

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.	Microbiology, nanotechnology, forensic science and genetic engineering. Incorporate effective career with marketing, project management, business development or venture capital within the biotech, pharmaceutical,	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. Utilize microorganisms in the preparation of cosmetics. Evaluate the biological potential in samples return from satellites and solar system. Discuss the role of
					venture capital within the biotech,	return from satellites and solar system.
					*	
					medical technology	antimicrobial fabrics,
					or related fields.	carpets, tiles and
						colorants. Produce
						bacteriostatic sanitary
						napkins and towels.

						Comprehend on paper,
						rubber and plastic
						Microbiology
M.Sc.	PEMBF20	Fungal	This course is designed to	Assimilate and apply	Incorporate effective	Perform screening and
Microbiology		biotechnology	provide an exposure to the	principles and	career with	strain development for
		and	students about the	concepts towards	marketing, project	production of different
		Bioprospecting	potential of fungi as food	skill development	management,	bio-molecules.
			and in field of	and employability.	business	Design a bioreactor
			biotechnology as source of		development or	with special emphasis
			different enzymes,		venture capital	on fungal systems.
			secondary metabolites,		within the biotech,	Comprehend about
			vitamins, polysaccharides,		pharmaceutical,	different secondary
			polyhydric alcohols,		medical technology	metabolites of fungal
			pigments, lipids,		or related fields.	origin. Demonstrate
			glycolipids, biofertilizers			methods of
			and biopesticides.			recombinant
						technology with
						special emphasis on
						fungal system.
						Explain the role of
						fungi in food and feed
						industries.

M.Sc.	PCMBL20	Microbial Gene	the syllabus of the course	Attain an in-depth	Acquaint a broader	Utilize the tools and
Microbiology		Technology	provides an insight on the	knowledge in the	knowledge in the	techniques of genetic
			concepts of genetic	respective domains	concepts of	engineering and the
			engineering and	augmented through	Taxonomy,	role of DNA
			techniques employed in	self-learning.	molecular biology,	manipulative
			recombinant DNA		immunology, food,	enzymes. Compile
			technology.		environment and	DNA sequencing
					agricultural	methods. Discuss the
					Microbiology,	modern tools and
					nanotechnology,	techniques of
					forensic science and	genomics and
					genetic engineering.	application of
						antisense technologies
M.Sc.	PEMBG20	Microbial	The syllabus is designed	Attain an in-depth	Acquaint a broader	Describe about
Microbiology		Nanotechnology	to provide in depth	knowledge in the	knowledge in the	molecular
			knowledge on microbial	respective domains	concepts of	nanotechnology and
			bio nanotechnology.	augmented through	Taxonomy,	microbial synthesis of
				self-learning.	molecular biology,	nanoparticles. Discuss
					immunology, food,	on types, function and
					environment and	characterization of
					agricultural	nanoparticles.
					Microbiology,	Comprehend the use
					nanotechnology,	of nanoparticles in
					forensic science and	cancer therapy and in
					genetic engineering.	biology. Elaborate the
						advantages and
						disadvantages of

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

S. Dagacel

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