



LITTLE FLOWER COLLEGE

Affiliated to The University of Calicut

CRITERION 2 - TEACHING-LEARNING AND EVALUATION

2.6.1: Programme and course outcomes of the Programmes offered by the institution.



**ANNUAL QUALITY ASSURANCE REPORT
2020 - 2021**

Programme outcomes

1. Critical Thinking
2. Problem Solving.
3. Effective Communication
4. Effective Citizenship
5. Environment conservation and Sustainability
6. Self-directed and Life-long Learning.

Department of English
Programme Specific Outcomes (PSOs)

PSO Code	Programme Specific Outcomes (PSO)
PSO 1	To impart advanced training in the correct use of English in a formal way with standard pronunciation, word stress and intonation and develop communication skills by providing theoretical knowledge of the mechanism of effective communication
PSO 2	To develop their critical thinking abilities and write creatively and critically
PSO 3	To facilitate students to attain various perspective in reading literature like gender, race, caste, ethnicity, religion, region, environment and nation
PSO 4	To introduce students to literary texts and their unique conventions and contours –the linguistic, the social, the cultural and the political; to recognize diverse points of view within a single text and to understand the rationale of polyphony
PSO 5	To introduce the students to the history and principles of literary criticism since Plato and to cultivate in them the philosophical and critical skills with which literature can be appreciated
PSO 6	Expose students to the discipline of journalism which has come to play a significant role in contemporary society
PSO 7	To make the students aware of the basic concepts of Information and Technology

Course Outcome

Course Code	Name Of the Course	Course Outcomes	PSOs attained
ENG1AO1	Transactions: Essential English Language Skill	CO1: To learn the speech sounds and basics of word/sentence stress CO2: Familiarize with commonly used synonyms, phrasal verbs, idiomatic expressions and vocabulary in everyday social context.	PSO1, PSO2

		<p>CO3: To study basic grammatical structures and tenses</p> <p>CO4: Acquire skills for social communication and academic communication</p> <p>CO5: Understand various effective reading methods</p>	
ENG1A02	Ways with Words: Literatures in English	<p>CO1: To help students develop the acumen to read, appreciate and discuss literature.</p> <p>CO2: To introduce students to the linguistic qualities of a literary text and to unravel the many meanings of the text</p> <p>CO3: To acquaint the students with different genres of literature and to analyse them</p>	PSO2, PSO3, PSO4
ENG2A03	Writing For Professional and Academic Success	<p>CO1 : To develop writing skills, to learn to integrate writing and thought and to apply the conventions of academic writing correctly</p> <p>CO2: To acquire the correct sense of format, syntax, grammar, punctuation and spelling</p> <p>CO3: To acquire concepts, principles and vocabulary of reasoning and argumentation and use analysis, synthesis and evaluation to advance arguments</p> <p>CO4: To gain an understanding of discourse conventions ranging from structure and paragraphing to tone and mechanics</p>	PSO1, PSO2
ENG2A04	Zeitgeist: Readings on Contemporary Culture	<p>CO1: To inculcate the values enshrined in the constitution of India and to provide an insight on the secular framework of the country.</p> <p>CO2: To familiarize the learners with concepts such as conservation, sustainability and the life of the marginalized and their interconnectedness.</p> <p>CO3: To foster among learners an awareness of the diverse problems faced by women and the sexual minorities and to promote a culture of inclusion and mutual respect.</p> <p>CO4: To understand the “human” as articulated among the various cultures and promote a multicultural and plural understanding of rights</p>	PSO2, PSO3, PSO4
ENG3A05	Signatures: Expressing the Self	<p>CO1: To enable the students to read and critically appreciate the different genres of expressing the self</p> <p>CO2: To appreciate the fluid and flexible narratives of self expression that transcend the conventions of genre</p>	PSO2, PSO3, PSO4

		<p>CO3: To understand how personal narratives intersect with the larger social realities</p> <p>CO4: To read personal narratives that move beyond the individual self to express the collective self</p> <p>CO5: To understand how the distinctions between fact and fiction blur in personal narratives</p>	
ENG4A06	Spectrum: Literature and Contemporary Issues	<p>CO1: To make the learners aware of the liberal humanist dimensions of literature and media in the contemporary world.</p> <p>CO2: To enable the learners to understand concepts like globalization, commercialization and Intellectual Property Rights through new literatures.</p> <p>CO3: To inculcate the spirit of universal brotherhood by presenting critiques of race, Xenophobia, war and national borders.</p> <p>CO4: To disseminate knowledge about the rights of minorities such as children, animals and the disabled and thus create a positive change in the societal perception of them</p>	PSO2, PSO3, PSO4
ENG1B01	Introducing Literature	<p>CO1: To introduce students to the language of literature, i.e., the meaning-making devices, verb phrases, collocations, linkers, sense groups and their functions in the literary text</p> <p>CO2: To train the students to identify the linguistic structures of poetic texts: symbols, metaphors, and other tropes and equip them in poetic conventions</p> <p>CO4: To prepare students in reading literary/cultural texts closely, beyond the literal.</p> <p>CO4: To enable students to recognize the dominant voice/s within the text and its agendas</p> <p>CO5: To encourage questioning the text in order to perceive marginalized voices - the voices of the child, Dalit, transgender and female</p> <p>To comprehend how the subaltern perspectives question and counter the privileged voices in the mainstream texts</p>	PSO1, PSO2, PSO3, PSO4

ENG2B02	Appreciating Poetry	<p>CO1: To introduce the students to the basic elements of poetry, including the stylistic and rhetorical devices employed in poetry, and to various genres of poetry.</p> <p>CO2: To facilitate students to attain various perspective in reading poetry like gender, race, caste, ethnicity, religion, region, environment and nation.</p> <p>CO3: To familiarize the learners with different forms of poetry written in British and American literature.</p> <p>CO4: To create an awareness among the learners about different forms and themes of poetry produced across the globe in the history of literature.</p>	PSO2, PSO3, PSO4
ENG3B03	Appreciating Prose	<p>CO1: To familiarize the students with different types of prose writing.</p> <p>CO2: To introduce to them the basic concepts of style and literary devices in prose.</p> <p>CO3: To acquaint them with cultural diversity and divergence in perspectives.</p> <p>CO4: To develop their critical thinking abilities and write creatively and critically.</p>	PSO2, PSO3, PSO4
ENG3B04	English Grammar and Usage	<p>CO1: To familiarize the students with the key concepts of English grammar and to use them more sensitively in their day-to-day communication needs.</p> <p>CO2: To help students towards a better language use through the understanding of the sentence patterns in English.</p> <p>CO3: To help the students develop a sense of English grammar, idioms, syntax, semantics and their usage.</p> <p>CO4: To develop the logical and analytical skills in the use of language for communication.</p> <p>CO5: To familiarize students with contemporary English usage</p>	PSO1, PSO2
ENG4B05	Appreciating Fiction	<p>CO1: To help students discover the pleasures in reading fiction.</p> <p>CO2: To aid students gain an insight into the human condition and the complexities of life.</p>	PSO2, PSO3, PSO4

		CO3: To acquaint the students with different types of fiction and analyze them.	
ENG4B06	Literary Criticism	CO1: To have an understanding of important texts and movements in the history of literary criticism. CO2: To examine how literary criticism shapes literature and culture across centuries. CO3: To recognize and critique the major arguments underlying critical writings. CO4: To relate critical perspectives to the history of eastern and western ideas.	PSO2, PSO3, PSO4, PSO5
ENG5B07	Appreciating Drama And Theatre	CO1: To introduce the students to the basic elements of drama, including the historical progress of drama in different continents. CO2: To foster an ability in the students for appreciating drama as an art form. CO3: To familiarize the students with the different genres and masters of drama. CO4: To facilitate the learners to critically go beyond the theatrical performances to the texts and approach them critically from various standpoints	PSO2, PSO3, PSO4
ENG5B08	Literary Theory	CO1: To cultivate among the students an understanding of important texts and movements in the history of literary theory. CO2: To enable the learners to critically approach literature and culture in the context of theory. CO3: To enrich the students through various perspectives of thinking and critique the major arguments presented in theory. CO4: To promote a pluralistic perspective of culture and literature in a multicultural society	PSO2, PSO3, PSO4, PSO5
ENG5B09	Language and Linguistics	CO1 : To lead to a greater understanding of the human mind, of human communicative action and relations through an objective study of language CO2: To familiarize students with key concepts of Linguistics and develop awareness of latest trends in Language Study CO3: To help students towards a better pronunciation and to improve the general	PSO1, PSO2

		<p>standard of pronunciation in every day conversation and in reading.</p> <p>CO4: To help the students develop a sense of English grammar, syntax and usage.</p> <p>CO5: To improve writing and speech skills</p>	
ENG5B10	Indian Writing in English	<p>CO1: To provide an overview of the various phases of the evolution of Indian writing in English</p> <p>CO2: To introduce students to the thematic concerns, genres and trends of Indian writing in English</p> <p>CO3: To expose students to the pluralistic aspects of Indian culture and identity</p>	PSO2, PSO3, PSO4
ENG6B11	Voices of Women	<p>CO1: To equip students to steer clear of misconceptions regarding women and to evolve a human perspective about them.</p> <p>CO2: To arouse a keen interest in analysing critically the diversity of women's experiences across the world and to marvel at their creative skills.</p> <p>CO3: To perceive gender as a social construct</p>	PSO2, PSO3, PSO4
ENG6B12	Classics of World Literature	<p>CO1: To acquaint the students with the classic literatures and thereby composite cultures of the world</p> <p>CO2: To enable students to develop cross cultural perspectives</p> <p>CO3: To enhance the literary sensibility of students</p>	PSO2, PSO3, PSO4, PSO5
ENG6B13	Film Studies	<p>CO1: To appreciate film as an art form and its aesthetics.</p> <p>CO2: To understand how film connects with history, politics, technology, psychology and performance.</p> <p>CO3: To critically appraise the nature of representation on screen and how class, race ethnicity and sexuality are represented.</p> <p>CO4: To develop analytical skills so that the student can produce informed and thorough close readings of films.</p>	PSO2, PSO3, PSO4
ENG6B14	New Literatures in English	<p>CO1: To expose the students to diverse cultures and modes of expression.</p> <p>CO2: To enable them to explore issues of cultural plurality and hybridity</p>	PSO2, PSO3, PSO4

		<p>CO3: To expose the learners to literary negotiations of colonization and decolonization, identity, inequality, Marginalization and so on.</p>	
ENG6B15	Literature of the Marginalized	<p>CO1: To sensitize the students on issues pertaining to the marginalized CO2: To educate the students about the evolving patterns of generic and other technical possibilities that the marginalized use to represent their predicament. CO3: To communicate to the students how marginality is very often a contextual factor related to the socio cultural reality. CO4: To discuss how the question of marginality has evolved by giving space to new and till now avoided categories of outcastes, bodily and culturally and how such people develop their own styles of articulation and subsequent theoretical foundations</p>	PSO2, PSO3, PSO4
ENG5D01	Film Studies	<p>CO1: To appreciate film as an art form and its aesthetics CO2: To understand how film connects with history, politics, technology, psychology and performance. CO3: To critically appraise the nature of representation on screen and how class, race ethnicity and sexuality are represented.</p>	PSO2, PSO3, PSO4
JOU1(2)C01	Introduction to Communication and Journalism	<p>CO1: Make the students literate about the communication terms CO2: Provide the students with an outlook of the history of the Print Media</p>	PSO6
JOU4(3)C01	Journalistic Practices	<p>CO1: Provide the students with practical knowledge in reporting and editing CO2: Introduce them to the other journalistic practices like P.R. and advertising</p>	PSO6

PROGRAMME SPECIFIC OUTCOME

PSOs	MA Multimedia
PSO1	Deepening and strengthning their capability as media personnels. To provide and understand media field in visually and practically through soft wares and industrial visit andfilm screening.To provide knowledge about the technical writing.
PSO2	To provide indepth Accademic and professional knowledge of production softwares for more expertise in their creative and technical productions. Extended skill in the post production principles of the film industry and collecting evaluating and practicalizing the film reviews on the post production principles basis . imbibe the reconstructing techniques in theoratical and practical manner
PSO3	Provide practical knowledge on new media and professional training in website desgning, blog desgning.Understand the animation field in multimedia and to help studying animatic soft wares.
PSO4	Understand the media research and develop good research career in our media students and help to produce good project to the society and to help students to prepare a movie script.To help find out the aesthetics on screen . To give indusrial experience with professional TV Channels and Designing companies for professional jobs.

COURSE OUTCOME

NAME OF THE COURSE	COURSE CODE	COURSE OUTCOMES	PSO ADDRESSED
SEMESTER 1			
VISUAL COMMUNICATION	MM1C01	MODULE 1: Provide knowledge about Visual literacy and visual media communication	PSO1
VISUAL COMMUNICATION	MM1C01	MODULE 2: Provide knowledge about Visual language	PSO1
VISUAL COMMUNICATION	MM1C01	MODULE 3: Provide knowledge about Complementary media- sound, visual effects and BGM. Also provide information about structure of human eye, human ear, still camera and microphones.	PSO1
VISUAL COMMUNICATION	MM1C01	MODULE 4: Provide knowledge about language of pictures, nature of graphics, factors shaping the effectiveness of graphics, functions of graphics, functions of visuals, communication functions, and physiological functions of visual communication.	PSO1
VISUAL COMMUNICATION	MM1C01	MODULE 5: Provide knowledge about language of film, development of film communication, scene and short break down, 180 degree rule, film as language.	PSO1
WRITING FOR THE MEDIA	MM1C02	MODULE 1: To provide detail knowledge about news:concept,elements,values.To gives idea about reporting.	PSO1

WRITING FOR THE MEDIA	MM1C02	MODULE 2: To study the news structure ,types of news.To illustrate the types of writing in news field.	PSO1
WRITING FOR THE MEDIA	MM1C02	MODULE 3: To give the knowledge the news editing.To study the scope and need of news editing.Understand the lead,types of headlines. To deep understanding of News desk and organizational structure.	PSO1
WRITING FOR THE MEDIA	MM1C02	MODULE 4: To provide a brief idea about TV News electronic news gathering,Introduce various news channels.To study the role and duties of the reporter.	PSO1
WRITING FOR THE MEDIA	MM1C02	MODULE:5 To introduce the TV news programmes.To study the TV Documentaries.Explain the journalistic practices in different medias:online,Photo etc.	PSO1
DIGITAL ILLUSTRATION AND TYPOGRAPHY	MM1C03	MODULE 1: To gives a clear idea about the color models layer masking,blending modes.To understand the layer working.	PSO1
DIGITAL ILLUSTRATION AND TYPOGRAPHY	MM1C03	MODULE 2: To Provide knowledge about the illustrator software and different applications.Colour palette	PSO1
DIGITAL ILLUSTRATION AND TYPOGRAPHY	MM1C03	MODULE 3: To introduce the illustrator tools, interface overview,Creating text and designing text in layout:Text formatting.	PSO1

DIGITAL ILLUSTRATION AND TYPOGRAPHY	MM1C03	MODULE 4: To provide Knowledge about the effects in designing, Design rules in various medias: poster, - Poster layout, Introduce painting tools :matte painting.	
PRACTICAL-GRAPHIC JOURNALISM	MM1P01	To enable students to news writing skill and understand the technical writing skills.	PSO1
PRACTICAL-INTRODUCTION TO UX/UI DESIGNING	MM1P02	To study the interface designing and understand the principles of interface designing.	PSO1
DIGITAL ILLUSTRATION & TYPOGRAPHY	MM1P03	To understand the designing in various media. Understand the layout designing.	PSO1
SEMESTER 2			
PRODUCTION TECHNIQUES.	MM2C01	MODULE 1: Provide knowledge about different production stages, discussions, production designing and duty assign. Also provide information about production executive manager, visual media production management and floor manager.	PSO2
PRODUCTION TECHNIQUES.	MM2C01	MODULE 2: Provide knowledge about visualisation and creative thinking, creative and technical side of production, shooting, screen play and scene arrangements, shooting chart-artist by charting, location by charting etc. Also provide information about shooting script, continuity problems..	PSO2
PRODUCTION TECHNIQUES.	MM2C01	MODULE 3: Provide knowledge about technical and creative side of camera, functions of camera, lens and filters used in camera. Also provide information	PSO2

		about shots and shot movements, trolley, dolly, crane movements, lights and mood creations, angles and viewpoints.	
PRODUCTI ON TECHNIQU ES.	MM2C01	MODULE 4: To provide a detail picture on film lighting and lighting equipments.Aesthetics of film lighting in production.	PSO2
SOUND RECORDIN G,EDITING &MASTERI NG	MM2C02	MODULE 1: To give the knowledge about evolution of sound.Describe the technical side of sound system,comparison between digital and analogue.	PSO2
SOUND RECORDIN G,EDITING &MASTERI NG	MM2C02	MODULE 2: To give clear idea on Audio studio.Introduce the audio editing software Pro Tools and study the interface and tools.	PSO2
SOUND RECORDIN G,EDITING &MASTERI NG	MM2C02	MODULE 3: To provide knowledge about the recording basics and study the protocols recording.To study the protocols technicality .Introduce the types of microphones.	PSO2
SOUND RECORDIN G,EDITING &MASTERI NG	MM2C02	MODULE 4: To introduce the aesthetic sense of sound,Track usages for media productions.To study the suitable head phones for recording purposes.	PSO2
PRACTICA L-STILL PHOTOGRA PHY	MM2P01	Provide practicalknowledge on digital photography.	PSO2
PRACTICA L-VIDEO RECORDIN G & EDITING	MM2P02	To help understand the concept of Film production stages ,and technical aspects	PSO2

PROJECT(GROUP): PUBLISHING A PRINT MAGAZINE	MM2Pr01	To prepare a project for the publishing a print magazine	PSO1
SEMESTER 3			
NEW MEDIA	MM3C01	MODULE 1: Provide knowledge about new media and its applications and characteristics.	PSO3
NEW MEDIA		MODULE 2: Provide knowledge about HTML basics, CSS layout, using images, text, animation, video etc. Interface designing in Adobe Photoshop, creating web animations and intros using Adobe Flash, designing web pages with Adobe Dreamweaver, table layout vs Div layouts, AP elements, interactive CD creation methods.	PSO3
		MODULE 3 Provide knowledge about Writing for the web, blogs, social networking, classified web sites, news portals, online magazines.	
NEW MEDIA		MODULE 4: Provide knowledge about Domain name registration, web hosting, content updating, trouble shooting, password protection	PSO3
3D MODELING AND ANIMATION	MM3C02	MODULE 1: Provide knowledge about modelling, clay modelling, introduction to Z-brush	PSO3
3D MODELING AND ANIMATION		MODULE 2: Provide knowledge about 3Ds max, basic modelling concepts, standard primitives and extended primitives, custom shape modelling, polygon modelling, mesh modelling, nurbs modeling	PSO3

3D MODELING AND ANIMATION		MODULE 3: Provide knowledge about Texturing, materials, map, UVW unwrapping	PSO3
3D MODELING AND ANIMATION		MODULE 4: Provide knowledge about Animation, text and character animation (morphing and wriggling), reactors, cloth animation, bipid animation	PSO3
3D MODELING AND ANIMATION		MODULE 5: Provide knowledge about Light, camera and rendering	PSO3
BRIEF HISTORY OF CINEMA	MM3C03	MODULE 1: To provide conceptual background of film, To understand different film movements, To give knowledge about early history and earle film academicians.	PSO3
BRIEF HISTORY OF CINEMA BRIEF HISTORY OF CINEMA	MM3C03	MODULE 2: To give deep knowledge about theoretical concept of cinema and explain the different film theories.	PSO3
BRIEF HISTORY OF CINEMA	MM3E01	MODULE 3: To give deep knowledge about Indian cinema ,To give clear picture about Indian cinema and Malayalam cinema. To through knowledge about critical study on art and commercial categorization of film.	PSO3
BRIEF HISTORY OF CINEMA	MM3E01	MODULE 4: To give the knowledge about film language and grammatical background of film. To illustrate the classification of film genres.	PSO3

BRIEF HISTORY OF CINEMA	MM3E01	MODULE:5 To provide deep knowledge about film script theory and practical. To give technical knowledge about film.	PSO3
DGITAL MEDIA STUDIES	MM3E02	MODULE 1: To provide knowledge about communication theories. To understand the feature of media audience.	PSO3
DGITAL MEDIA STUDIES	MM3E02	MODULE 2: To understand the digital media communication. To clarify the change of society in the digital era. To find out the importance of media ownership.	PSO3
DGITAL MEDIA STUDIES	MM3E02	MODULE 3: To understand the media culture. To give an outline on cultural studies and introduce main cultural theorist.	PSO3
DGITAL MEDIA STUDIES	MM3E02	MODULE 4: To introduce the social networking communication paradigm-its challenges and opportunities. To understand the communication behavior in social networking sites :Phishing, fraudulent entities.	PSO3
DGITAL MEDIA STUDIES	MM3E02	MODULE:5 To provide knowledge about media representations:gender and sexuality. To illustrate the audience concept and meaning of communication.	
Practical-Web Designing	MM3P01	To prepare creative web designs. To help career build up in web designing.	PSO3
Practical-3D Modeling & Animation	MM3P02	To help to understand 3d modeling and animation techniques and software with plug in supports.	PSO3
SEMESTER 4			

MEDIA LAWS AND ETHICS	MM4C01	MODULE 1: Provide knowledge about legal concepts, judicial systems in India, fundamental rights, directive principles, freedom of the press, etc.	PSO4
MEDIA LAWS AND ETHICS	MM4C01	MODULE 2: Provide knowledge about defamation-libel, slander and defenses of media professional	PSO4
MEDIA LAWS AND ETHICS	MM4C01	MODULE 3: Provide knowledge about various press laws.	PSO4
MEDIA LAWS & ETHICS	MM4C01	MODULE 4: Provide knowledge about different applications for communication purpose .	PSO4
MEDIA LAWS AND ETHICS	MM4C01	MODULE 5: Provide knowledge about various media ethics and issues.	PSO4
DIRECTORIAL PRACTICE	MM4E03	MODULE 1: Provide knowledge about role of director, film theories, developing stories and ideas, screen writing concepts, screen writing exercise, developing talents, casting .	PSO4
DIRECTORIAL PRACTICE	MM4E03	MODULE 2: Provide knowledge about acting, directing talents and crew, production planning, production design, pre production.	PSO4

DIRECTORIAL PRACTICE	MM4E03	MODULE 3: Provide knowledge about mise en scene, camera direction, location sound, continuity, expression and body language	PSO4
DIRECTORIAL PRACTICE	MM4E03	MODULE 4: Provide knowledge about importance of sound, editing principles, analysis and feedback, editing from fine cut to sound mix, title.	PSO4
DIGITAL MEDIA PRODUCTION	MM4E04	MODULE:1 To provide knowledge about the concept on different media productions. Conceptual and practical mannerisms of media productions.	PSO4
DIGITAL MEDIA PRODUCTION	MM4E04	MODULE:2 To brief knowledge on media research and statistical analysis.	PSO4
DIGITAL MEDIA PRODUCTION	MM4E04	MODULE:3 To provide technical knowledge about production planning and production team. Describe single camera production and multi camera production. Aesthetic level of media production: directing the actor, visualization. To give idea on media management.	PSO4
DIGITAL MEDIA PRODUCTION	MM4E04	MODULE:4 To give knowledge about TV anchor, To illustrate the post production.	PSO4
PRACTICAL- ADVERTISING DESIGNING AND PRODUCTION	MM4P01	To help to understand advertising methods and advertising concept of Digital world	PSO4
PRACTICAL-Motion Graphics	MM4P02	To promote to develop creative skills of Graphics animation, text animation, Visual Advertising.	PSO4
PROJECT(INDIVIDUAL):10	MM4Pr01	To prepare creative documentary project .To promote creative skills of videography, editing, direction and writing skills.	PSO4

MINUTES DOCUMEN TARY FOR A TV CHANNEL OR ANIMATIO N FILM PRODUCTI ON:(30 TO 60 SECONDS) AND 6 WEEKS INTERNSHI P			
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B.Sc Zoology Programme Specific Outcomes (Psos)

PSO 1

Understand The Biological Diversity And Grades Of Complexity Of Various Animal Forms Through Their Systematic Classification And Process Of Organic Evolution

PDSO 2

Understand The Roles Of Plants, Animals And Microbes In The Sustainability Of The Environment And Their Interaction Among Themselves And Deterioration Of The Environment Due To Anthropogenic Activities.

PSO 3

Understand The Concepts And Principles Of Biochemistry, Immunology, Physiology, Ethology, Endocrinology, Developmental Biology, Cell Biology, Genetics, Molecular Biology And Microbiology And Develop Technical Skills In Biotechnology, Bioinformatics And Biostatistics.

PSO 4

Perform Laboratory Procedures As Per Standard Protocols In The Areas Of Animal Diversity, Systematics, Cell Biology, Genetics, Biochemistry, Molecular Biology, Microbiology, Physiology, Immunology, Developmental Biology, Environmental Biology, Ethology, Evolution And Science Methodology.

Name Of The Course	Course Code	Course Outcomes	PSO Addressed
ANIMAL DIVERSITY: NON-CHORDATA PART- I MODULE 1. PRINCIPLES OF CLASSIFICATION AND NOMENCLATURE	ZOL1B01T	Describe The Principles Of Classification And Nomenclature	PSO1
Module 2. Five Kingdom Classification Of Living Organisms		Explain The Five Kingdom Classification Of Living Organisms	
Module 3. Concepts Of Classification Of Animals		Understand The Concepts Of Classification Of Animals	
Module 4. Kingdom: Protista		Explain The Classification With Examples And Characteristic Features Of Kingdom Protista And Describe The Morphology And Structural Organization Of Paramecium	
Module 5. Subkingdom: Mesozoa		Describe The Characteristic Features Of Subkingdom Mesozoa	
Module 6. Subkingdom: Parazoa		Explain The Classification Of Phylum Porifera And Elucidate The Salient Features Of	
Module 7. Subkingdom: Metazoa		Describe The Characteristic Features Of Phylum Cnidaria And Ctenophora, Illustrate The Classification Of Phylum Cnidaria Down To Classes And Explain The Structural Organization Of Obelia	
Module 8. Acoelomata		Explain The Salient Features Of Phylum Platyhelminthes And Illustrate Its Classification Down To Classes	

Module 9. Pseudocoelomata		Explain The Characteristic Features And Classification Of Super-Phylum Aschelminthes And Phylum Nematoda	
Module 10. Pseudocoelomate Minor Phyla		Elucidate The Characters Of Pseudocoelomate Minor Phyla Rotifera And Gastrotricha	
Animal Diversity: Non-Chordata Part – II Module 1. Phylum Annelida	Code: ZOL2B02T	Explain The Classification With Examples And Characteristic Features Of Phylum Annelida And Describe The Morphology And Structural Organization Of Neanthes	PSO1
MODULE 2. PHYLUM ONYCHOPHORA		Describe The Distribution, Peculiarities And Affinities Of Phylum Onychophora	
Module 3. Phylum Arthropoda		Explain The Classification Of Phylum Arthropoda; Elucidate The Salient Features Of Each Class And Describe The Morphology And Structural Organization Of Penaeus	
MODULE 4. PHYLUM MOLLUSCA		Describe The Characteristic Features Of Phylum Mollusca, Illustrate Its Classification down To Classes And Explain The Structural Organization Of Pila Globosa	
Module 5. Phylum Echinodermata		Explain The Salient Features Of Phylum Echinodermata And Illustrate Its Classification Down To Classes	
Module 6. Phylum Hemichordata		Understand The Salient Features And Affinities Of Phylum Hemichordata	
MODULE 7. COELOMATE MINOR PHYLA		Elucidate The Characters Of Coelomate Minor Phyla Phoronida, Ectoprocta And Echiura	
Animal Diversity: Chordata Part – I Module 1. Introduction To Chordates	ZOL3B03T	Explain The Characteristics Of Chordates And Outline Classification Of The Phylum Chordata (2 Hrs)	

Module 2 Sub Phylum Urochordata		Describe The Salient Features And Affinities Of Subphylum Urochordata And Its Classification Down To Classes; Elucidate The Morphology And Structural Organization Of Ascidia	
Module 3 Subphylum Cephalochordata		Explain The Salient Features And Affinities Of Subphylum Cephalochordata With Reference To Branchiostoma	
Module 4 Subphylum Vertebrata		Describe The Salient Features Of Subphylum Vertebrata, Illustrate Its Classification Down To Classes And Elucidate The Characteristics Of Division Agnatha	
Module 5 Superclass Pisces		Enumerate The Salient Features Of Superclass Pisces And Illustrate Its Classification Down To Orders And The Morphology And Structural Organization Of Mugil Cephalus	
Module 6 Class Amphibia		Describe The Salient Features And Affinities Of Class Amphibia And Its Classification Up To Orders; Explain The Morphology And Organ Systems Of Hoplobatrachus Tigerinus	
Module 7 Class Reptilia		Elucidate The Characteristic Features Of The Class Reptilia And Its Classification Down To Orders; Describe The Morphology And Organ Systems Of Calotes Versicolor	
Animal Diversity: Chordata Part – II Module 1 Classification Of Aves		Describe The Classification Of Class Aves Down To Orders, Salient Features Of Each Order With Suitable Examples	PSO1

MODULE 2.Type: Columba Livia	ZOL4B04T	Describe The External Characters And Functional Systems Of Columba Livia	
MODULE 3. Classification Of Mammalia		Enumerate The Salient Features And Classification Of Class Mammalia Down To Orders With Suitable Examples	
MODULE 4. Type: Oryctolagus Cuniculus (European Rabbit)		Elucidate The External Characters And Functional Systems Of <i>Oryctolagus Cuniculus</i>	
MODULE 5 COMPARATIV E ANATOMY		Compare The Circulatory, Excretory And Nervous Systems Of Vertebrates	
CELL BIOLOGY AND GENETICS MODULE 1. Techniques in Cell Biology	ZOL5B06T	Understand the principles and applications of various types of light microscopes, electron, Scanning-tunnelling and Atomic force microscope and illustrate the histological and histochemical processing of tissues	PSO 3
MODULE 2. Structure of eukaryotic cell		Explain the basic structure of a eukaryotic cell and the structure and functions of plasma membrane, mitochondria, lysosome, cytoskeletal elements and interphase nucleus.	
MODULE 3. Structure of chromatin		Illustrate the nucleosome organization of chromatin and higher order structures; structure of chromosomes and giant chromosomes	
MODULE 4. Cell Cycle & Cell division		Enumerate eukaryotic cell cycle and cell division by amitosis, mitosis and meiosis	
MODULE 5. Cancer and Apoptosis		Explain the causes of transformation, characteristics of transformed cells and the role of protooncogenes and tumor suppressor genes in malignant transformation; mechanism and significance of apoptosis	

MODULE 6. Interaction of genes		Enumerate allelic and non-allelic gene interactions; supplementary, complementary, polymeric, duplicate and modifying genes and polygenic inheritance).	
MODULE 7. Multiple alleles		Illustrate multiple allelism and solve problems related to blood group inheritance	
MODULE 8. Linkage and Recombination		Explain characteristics of linkage groups and linkage map; crossing over and calculation of recombination frequency; sex-linked, sex-influenced and sex-limited characters; sex differentiation and disorders of sexual development	
MODULE 9. Sex determination		Describe the mechanisms of sex determination including chromosomal, genic, haploid-diploid mechanisms; the hormonal and environmental influence on sex determination and gynandromorphism	
MODULE 10. Mutations		Explain mutagenesis, mutagens and chromosomal and gene mutations	
MODULE 11. Human Genetics and Genetic counselling		Enumerate the classification and grouping of human chromosomes; numerical and mutational human autosomal and sex chromosomal anomalies; polygenic human traits and genetic counseling	

Biotechnology, Microbiology and Immunology	ZOL5B07T	Understand the concepts and principles of Biotechnology, Microbiology and immunology	PSO3
MODULE 1: Genetic Engineering and Animal cell culture		Illustrate the steps in genetic engineering and animal cell culture	
MODULE 2: Transgenic Organisms		Explain transfection methods, transgenic animals and ethical issues of transgenic animals	
MODULE 3: Applications of Biotechnology		Enumerate the applications of biotechnology	

MODULE 4: Introduction and Methods in Microbiology		Understand the biological diversity of microbial forms and the various techniques for handling microbes in the laboratory	
MODULE 5: Basic Concepts in Bacteriology and Virology		Enumerate the basic structure and life cycle of bacteria and virus	
MODULE 6: Industrial and Medical Microbiology		Understand the industrial and medical importance of microorganisms	
MODULE 7: Cells and organs of immune system		Describe different types of immunity and the cells and organs of the immune system	
MODULE 8: Antigens, antibodies, immunity and MHC		Explain antigen, antibody, immunity and major histocompatibility complex	
MODULE 9: Autoimmune and Immunodeficiency diseases, Tumor and transplantation immunology		Enumerate autoimmune and immunodeficiency diseases and immunology of tumor and organ transplantation	
BIOCHEMISTRY AND MOLECULAR BIOLOGY	ZOL5B08T	Understand the concepts and principles of biochemistry, Molecular biology	PSO3
MODULE 1. Introduction		Understand the elements of biological importance and the non-covalent interactions that stabilize biomolecules	
MODULE 2. Carbohydrates		Describe the classification, types, structure, reactions and biological roles of carbohydrates, and diabetes Type I and II	
MODULE 3. Amino acids, peptides and protein		Enumerate the properties and classification of amino acids and their standard abbreviations; hierarchial levels of protein structure, classification, separation, purification and sequencing of proteins	
MODULE 4. Lipids and Nucleic acids		Explain the classification and functions of lipids and fatty acids; chemistry and structure of nucleic acids and sequencing of DNA	

<p>MODULE 5. Enzymes and co-enzymes</p>		<p>Understand the classification, nomenclature and properties of enzymes; enzyme action, co-enzymes, cofactors, isozymes, ribozymes and allosteric enzymes</p>	
<p>MODULE 6. Metabolism of carbohydrates, proteins and lipids</p>		<p>Explain glycolysis, Kreb's cycle, glycogenesis, glycogenolysis, gluconeogenesis, HMP pathway; amino acid and fatty acid oxidation and oxidative phosphorylation</p>	

<p>Methodology In Science, Biostatistics And Bioinformatics</p>	<p>ZOL5B09T</p>	<p>CO1 - Explain science, its importance, disciplines and the major steps in formulating a hypothesis, various hypothesis models, theory, law and importance of animal models, Simulations and virtual testing CO2 - Illustrate the principles and procedures in designing experiments and elaborate the requirements for carrying out experiments CO3 - Describe the ethical concerns in practicing science CO4 -Understand the Scope and role of statistics; methods and procedures of sampling; Construction of tables, charts and graphs. CO5 - Calculate central tendency and measures of dispersion and application of its knowledge on hypothesis testing as well as in problem solving CO6 -. Enumerate major biological databases and database search engines CO7 - Perform DNA and protein sequence analysis, including sequence alignment and sequence similarity search using BLAST, FASTA, CLUSTAL W and CLUSTAL X CO8 – Understand molecular phylogenetics and tools and methods for construction of phylogenetic trees CO9 - Explain genome sequencing technologies, functional genomics, proteomic technologies and molecular docking and drug design</p>	<p>Methodology In Science, Biostatistics And Bioinformatics</p>
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ETHOLOGY, EVOLUTION AND ZOOGEOGRAPHY	ZOL6B13T	<p>CO1 - Describe the patterns and mechanisms of animal behavior</p> <p>CO2 –Illustrate biological rhythms and the chemical basis of communication</p> <p>CO3 – Identify major evolutionary transitions over time, and explain the tools and evidences that support current hypotheses of the history of life on earth</p> <p>CO4 – Describe the evidences for evolution and its required corollaries</p> <p>CO5 – Explain the various theories of evolution</p> <p>CO6 – Describe the mechanisms by which evolution occurs</p> <p>CO7 – Recognize the significance of reproductive isolation in reducing gene flow between populations, biological and morphological species concepts and distinguish between prezygotic and postzygotic barriers to reproduction.</p> <p>CO8 – Review the events in human evolution</p> <p>CO9 – Explain ecological and historical foundations for understanding the distribution and abundance of species, and their changes over time and comprehend the basic principles of biogeography as a discipline</p>	ETHOLOGY, EVOLUTION AND ZOOGEOGR APHY
REPRODUCTIVE HEALTH AND SEX EDUCATION	ZOL5D01T	Understand the concepts and principles of Human reproductive system, Sexually transmitted diseases, fertility control and sex education	PSO4
MODULE 1. Introduction		Understand the reproductive health, and importance of sex education for teen and youth.	
MODULE 2. Sex determination and Chromosomal anomalies		Explain the chromosomal mechanism of sex determination and sex chromosomal anomalies.	

MODULE 3. Human Reproduction		Describe the structural and functional features of human reproductive system, fertilization, implantation, pregnancy, gestation, placenta, parturition and lactation	
MODULE 4. Infertility and Assisted reproductive technologies		Explain the scope of reproductive technologies in infertility management and the assisted reproductive techniques.	
MODULE 5. Prenatal Diagnosis		Understand the different methods of prenatal diagnosis and associated ethical issues	
MODULE 6. Fertility Control		Describe the different methods of fertility control.	
MODULE 7. Sexually transmitted infectious diseases		Understand the symptoms, mode of transmission, diagnosis and treatment of different sexually transmitted diseases and their socio economic dimensions.	
MODULE 8. Sexual orientation, sexual abuse and myths		Describe sexual orientation, sexual abuse and myths	
MODULE 9. Ethical aspects of sex		Understand the ethical aspects of sex	
ENVIRONMENTAL AND CONSERVATION BIOLOGY	ZOL6B12T	Understand the roles of plants, animals and microbes in the sustainability of the environment and their interaction among themselves and deterioration of the environment due to anthropogenic activities.	PSO2
MODULE 1. Introduction, Ecosystem and Energetics		Explain the structure of ecosystem and its functioning through energy flow and nutrient cycling	

MODULE 2. Biogeochemical Cycles and Limiting factors (5 hrs) Biogeochemical Cycles		Enumerate biogeochemical cycles and understand the concept of limiting factors	
MODULE 3. Population, Community and Habitat Ecology		Describe the ecology of population, community and habitat as a self regulating system	
MODULE 4. Population Interactions		Understand various types of population interactions and appraise the co-evolution	
MODULE 5. Social issues and Environment		Comprehend the diverse environmental and sustainability challenges ranging from local to global and the establishment of perfect harmony between economic development, social issues and environmental conservation	
MODULE 6. Ecological tools and Techniques		Enumerate the several tools and techniques employed for studies on populations, communities and ecosystems. (
MODULE 7. Biodiversity		Understand the threats to biodiversity, and strategies adapted for the conservation of diversity of organisms	
MODULE 8. Global strategy for conservation		Describe the various international strategies for conserving biodiversity	
MODULE 9. Toxicants and public health hazards		Describe the toxic chemicals, their toxicity levels and the health hazards caused by them	
REPRODUCTI	ZOL6B11T		

VE AND DEVELOPMENTAL BIOLOGY MODULE 1. Introduction and Human Reproductive system		Explain the reproductive strategies in invertebrates and vertebrates and structural and functional features of human reproductive system	PSO4
MODULE 2. Fertilization, Pregnancy, Gestation, Placentation, parturition and lactation		Describe process of fertilization, pregnancy, gestation, placentation, parturition and lactation in humans.	
MODULE 3. Reproductive technologies		Explain the scope of reproductive technologies in infertility management; prenatal diagnostic techniques and methods of fertility control	
MODULE 4. Introduction and Types of eggs		Understand the phases and theories of development, and classification of eggs	
MODULE 5. Cleavage and cell lineage		Enumerate the types of cleavage, arrangement of blastomeres, germ layers and their derivatives, cell lineage in Planocera and different types of blastula.	
MODULE 6. Development of Amphioxus, frog, chick and man		Illustrate the early developmental process of egg in Amphioxus, frog, chick and man	
MODULE 7. Cell Differentiation and Gene action during development		Explain the basics of cell differentiation and its genetic control, stem cells and applications of stem cell technology	
MODULE 8. Parthenogenesis		Describe parthenogenesis, types, and significance	
MODULE 9. Experimental Embryology & Teratology		Explain fate map construction, Spemann's constriction experiments on amphibian embryos, organizers in development, embryonic induction, gradient experiments in sea urchin eggs, cloning experiments in sheep and teratogenesis	

<p>A. Physiology and Endocrinology</p>	<p>ZOL 6B 11</p>	<p>CO1 - Explains the significance of balanced diet, different modes of nutrition, nutritional disorders and hormonal and neural control of digestion.</p> <p>CO2 - Gives a detailed account of the mechanism and processes involved in respiration, how gases are exchanged across diffusion membranes, haemodynamics, and disorders associated with respiratory system.</p> <p>CO3 –Module three describes the circulatory system in detail giving emphasis on components of blood and their functions, clinical analysis of blood, types of heart and abnormalities in their function.</p> <p>CO4 –Illustrates the ionic and osmotic regulation in organisms that inhabit different ecosystem, their adaptations and the excretory system in human beings.</p> <p>CO5 –The module explains the EM structure of skeletal muscles, physiology and chemistry of muscle contraction and different terminologies associated with muscle physiology.</p> <p>CO6 -. Describes the different components of nervous system, giant nerve fibres, nerve impulse transmission, neurotransmitters and synapses.</p> <p>CO7 –Gives a brief account of bioluminescence and bioelectricity produced by different groups of organisms in the Animal Kingdom</p>	<p>PSO 3, PSO 4</p>
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M.Sc. Zoology

Course outcomes

Name of the Course	Course code	Course outcomes	Module outcomes	PSO addressed
Biochemistry and Cytogenetics	ZOL1C01	To understand the general principles and concepts of biochemistry and cytogenetics	<p>Module 1- To understand structure, chemistry and functions of biomolecules</p> <p>Module 2- To understand mechanism of enzyme action and kinetics</p> <p>Module 3- To study Laws of bioenergetics</p> <p>Module 4- To understand metabolism and biosynthesis of biomolecules</p> <p>Module 5- To Study molecular organization of membrane structure and function</p> <p>Module 6- To study the structural organization and function of intracellular organelles</p> <p>Module 7- To understand cellular communication</p> <p>Module 8 - To Study organization of chromosomes and genes</p> <p>Module 9- To Understand the concept of cell signaling</p> <p>Module 10- To understand the mechanism of apoptosis and its significance</p>	PSO1

<p>Biophysics and Biostatistics</p>	<p>ZOL1C02</p>	<p>To understand the general principles, techniques, concepts and methodologies biostatistics and biophysics.</p>	<p>Module 1- to study the properties and types of colloidal systems</p> <p>Module2- To understand the mechanism of diffusion and osmosis</p> <p>Module3- To understand the concept of P^H and buffer</p> <p>Module4- To study characteristics of sound and physical aspects of sound transmission</p> <p>Module 5- To understand types and effects of radiations and their biological application</p> <p>Module 6- To understand several biophysical methods</p> <p>Module 7- A brief introduction on electrophysiological methods</p> <p>Module 8- To understand principles and applications of microscope</p> <p>Module 9- To understand different types of chromatographic separation techniques</p> <p>Module 10- To understand concept of gravity and G force</p> <p>Module 11- To understand the concept of nanotechnology and its application</p> <p>Module 12- an introduction of biostatistics – importance and definition</p>	<p>PSO1</p>
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			<p>Module 13- To understand concept of data</p> <p>Module 14- To study different statistical method</p> <p>Module 15- To study the basic concepts and Laws of Probability</p> <p>Module 16- An introduction to statistical inferences</p> <p>Module 17- To understanding correlation and regression</p> <p>Module 18- To understand different indices regarding ecological data analysis</p>	
Ecology and Ethology	ZOL1C03	To understand the general principles, concepts, and biotic interrelationships between organisms and animal behaviours.	<p>Module1 – To understand the basic concept of habitat and niche</p> <p>Module 2- To study structure, function and energetic of ecosystems and various trophic levels</p> <p>Module3- To understand the characteristics population ecology</p> <p>Module4- To understand the concept of interspecific and intraspecific interactions</p> <p>Module5- To study types, mechanism and changes involved in ecological succession</p>	PSO1

			<p>Module 6- To study in detail major terrestrial biomes</p> <p>Module 7- an overview of major biogeographical zones of India</p> <p>Module 8- To understand the idea of applied ecology</p> <p>Module 9- To study the principles of conservation and management ecosystem</p> <p>Module 10- An introduction about the basic concept of ethology</p> <p>Module 11- An overview of motivation, learning and adaptive behaviour</p> <p>Module 12 – To know different mating systems and modes of parental care</p> <p>Module 13 – To understand different hormones and their effects on behavioural patterns</p>	
Physiology	ZOL2C04	To understand the organization of various body organs and organ systems, their physiological functions and pathophysiology.	<p>Module 1: To understand the constituents of normal diet , role of hormones and enzymes in the gastrointestinal tract and energy balance.</p> <p>Module 2: A brief introduction of</p>	PSO2

			<p>different excretory organs in different animal groups, anatomy of kidney, regulation of water and acid balance.</p> <p>Module 3: A brief introduction of major respiratory systems and mechanism of pulmonary ventilation.</p> <p>Module 4: To understand the organization of human brain and diseases associated with brain.</p> <p>Module 5: To study various sense organs and their mechanism in detail-vision, taste, smell and tactile response.</p> <p>Module 6: To study the structural organization , physiology and neural and chemical regulation of heart.</p> <p>Module 7: To understand the lymph channels of body and its composition.</p> <p>Module 8: to understand in detail the concept of environmental physiology, methods of thermoregulation and role of various glands in thermoregulation.</p>	
Molecular biology	ZOL2C05	To understand basic concepts of molecular biology, gene organization and gene expressions.	Module 1: An overview of eukaryotic and prokaryotic DNA	PSO2

			<p>replication, various replication models and inhibitors of replication.</p> <p>Module 2: to study the safeguard systems of DNA.</p> <p>Module 3: To understand in detail the mechanism of transcription in eukaryotes and prokaryotes and their post transcriptional modification.</p> <p>Module 4: to understand the features of genetic code.</p> <p>Module 5: to study the structure ,composition, and biogenesis of ribosomes.</p> <p>Module 6: To understand the mechanism of translation in eukaryotes and prokaryotes and post translational modification.</p> <p>Module 7: An overview of control of gene expression at transcriptional and translational level.</p> <p>Module 8: To study the special features of eukaryotic genome, junk DNA, satellite DNA, selfish DNA, and organization of human genome.</p>	
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			<p>Module 9: To study the definition, explanation and organization of interrupted genes.</p> <p>Module 10: An overview of several gene families, concept of evolutionary clock and pseudogenes.</p> <p>Module 11: To study definition, types and features of transposons in eukayotes and prokaryotes.</p> <p>Module 12: To understand the concept of recombination and their types, concept of holiday model .</p> <p>Module 13: An overview of prokaryotic genome, methods of gene transfer in bacteria.</p> <p>Module 14: to study the general features of chloroplast and mitochondrial genomes.</p> <p>Module 15: To understand in detail the genetic rearrangements associated with cancer, virus induced cancer and new therapeutic interventions.</p>	
Systematics and Evolution	ZOL2C06	To understand the basic concepts and theories of evolution and classification	Module 1: To understand the definition and basic	PSO2

			<p>concepts in systematic and taxonomy.</p> <p>Module 2: to study the concept of species.</p> <p>Module 3: to understand the uses , theories and objectives of classification.</p> <p>Module 4: To study the types and purpose of taxonomic collections and preservation of specimens.</p> <p>Module 5: To study the nature, classification ,evolution and functions sof taxonomic characters.</p> <p>Module 6: to study the concept of zoological nomenclature.</p> <p>Module 7: To understand modern trends in systematic like DNA barcoding, chemotaxonomy, serotaxonomy, and cladistics.</p> <p>Module 8: To understand ethics related to taxonomic publication.</p> <p>Module 9: To know about various taxonomic impediments in collection and maintenance.</p> <p>Module 10: To study in detail the</p>	
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			<p>mechanism of natural selection and the concept of sexual selection</p> <p>Module 11: to understand the concept of population genetics, evidences of evolution.</p> <p>Module 12: To understand the concept of gradualism, punctuated equilibrium, anagenesis and cladogenesis.</p> <p>Module 13: An overview of molecular evolution , molecular divergence, molecular drive, molecular clock and phylogenetic relationships.</p> <p>Module 14: To understand the concept of evolutionary trends.</p>	
Immunology	ZOL3C07	To understand the cells and systems involved in immune response and the various immune response machanisms.	<p>Module 1: To understand the concept of haematopoiesis and its genetic regulation</p> <p>Module 2: An overview of antigens, adjuvants, haptens, epitopes and properties of B cells and Tcells.</p> <p>Module 3: To study the concept of antigen antibody interactions and immunotechniques.</p>	PSO3

			<p>Module 4: To understand the concept of humoral and cell mediated immunity.</p> <p>Module 5: To study immune effector mechanisms</p> <p>Module 6: To study the complement components, and complement activation pathways.</p> <p>Module 7: To study the organization and inheritance of MHC.</p> <p>Module 8: To understand the concept of transplantation immunology.</p> <p>Module 9: To understand the concept of hypersensitivity reactions.</p> <p>Module 10: an overview of types of vaccines.</p> <p>Module 11: To study the concept of malnutrition, and immune deficiency diseases.</p>	
Developmental biology and Endocrinology	ZOL3C08	To study the embryonic developmental pathway of birds and mammals.	<p>Module 1: To study the basic concept of development-commitment, specification, genomic imprinting.</p> <p>Module 2: to study the mechanism of</p>	PSO3

			<p>gametogenesis, fertilization and early development in sea urchins and mammals.</p> <p>Module 3:to understand mechanism of embryogenesis and organogenesis in detail.</p> <p>Module 4: To study the cellular and molecular basis of development.</p> <p>Module 5: to understand the genetic basis of development.</p> <p>Module 6: To understand the mechanism of metamorphosis, regeneration and aging.</p> <p>Module 7: To understand the concept of environmental regulation of animal development and teratogenesis.</p> <p>Module 8: to study the developmental mechanisms of evolutionary changes.</p> <p>Module 9: to study the major endocrine glands and their hormones secreted from them.</p> <p>Module 10: to understand the concept of general mechanisms of</p>	
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			<p>hormonal action.</p> <p>Module 11: to know the structure, anatomy, physiological functions and control of secretion of hormones and their pathophysiology.</p> <p>Module 12: To know about the hormones and male reproductive physiology</p> <p>Module 13: To know the hormones and female reproductive physiology.</p> <p>Module 14: to study about neural hormones and neuroendocrine pathophysiology.</p>	
<p>Fishery Sciece 1: Taxonomy</p>	<p>ZOL3E09</p>	<p>To understand the basic types of classification of fishes</p>	<p>Module 1: to understand the fundamentals of fish taxonomy and classification of fishes.</p> <p>Module 2: to understand the types and structure of integuments, colouration, structure, functions and medication of fins.</p> <p>Module 3: to study the mechanism of locomotion of fishes.</p> <p>Module 4: An overview of life history of fishes including age, growth and migration.</p> <p>Module 5: to study the mechanism of digestion in fishes- their food, feeding,</p>	<p>PSO3</p>

			<p>feeding behavior and mechanism.</p> <p>Module 6: to study in detail the mechanism of circulation in fishes- blood, blood cells, blood pigments, and functions of blood</p> <p>Module 7: To study in detail the mechanism of respiration in fishes-gills, accessory respiratory organs and gas transport.</p> <p>Module 8: to understand the mechanism of excretion and osmoregulation in different fishes.</p> <p>Module 9: To study in detail the structure and function of endocrine glands and regulation of endocrine secretion.</p> <p>Module 10: to understand the mechanism of adaptation in deep sea, cave dwelling and hill stream fishes.</p> <p>Module 11: To study the concept of oceanography- Ocean currents, ocean productivity and coral reefs.</p> <p>Module 12: To understand the concept of brackish water ecology and limnology.</p>	
Biotechnology and Microbiology	ZOL4C10	To understand the general methodologies of biotechnical processes and classification of microorganisms and their uses for human welfare.	<p>Module 1: To know the concept of cloning vectors and expression vectors.</p> <p>Module 2: to identify different steps in in vivo cloning.</p> <p>Module 3: To know various molecular</p>	PSO4

			<p>probes.</p> <p>Module 4: To know the concept of genomic and cDNA library , their construction, blotting techniques and chromosome walking.</p> <p>Module 5: To study different types of PCR methods and their applications.</p> <p>Module 6: To know in detail the different molecular probes.</p> <p>Module 7: To know the mechanism of isolation, DNA sequencing and synthesis of gene.</p> <p>Module 8: To understand different transfection methods and the concepts of transgenic animals- preparation and uses.</p> <p>Module 9: To study applications of biotechnology in animal and human health care.</p> <p>Module 10: To know in detail the mechanism of in vitro fertilization.</p> <p>Module 11: To study the methods of animal and tissue culture.</p> <p>Module 12: To know several methods of gene silencing techniques.</p> <p>Module 13: The identify several methods of gene cloning, their merits and demerits.</p> <p>Module 14: To identify the application of biotechnology in</p>	
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			<p>environment.</p> <p>Module 15: To study the application of biotechnology in agriculture.</p> <p>Module 16: To learn about various intellectual property rights and their implementation.</p> <p>Module 17: To understand the ethical and social implications of genetic engineering.</p> <p>Module 18: To know about the history and scope of microbiology And major types of taxonomic and phylogenic classification in microbiology.</p> <p>Module 19: To understand in detail the structure and function of bacterial cell.</p> <p>Module 20: To know about various nutritional types and requirements in microbes.</p> <p>Module 21: To understand the types of growth patterns and their measurement in microbes.</p> <p>Module 22: To know about the biosynthetic and non synthetic processes involved in the utilization of energy.</p> <p>Module 23: To study the general structural properties and types of viruses.</p> <p>Module 24: To know in detail the various microbial diseases, their causal</p>	
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			<p>organisms, and preventive measures.</p> <p>Module 25: An overview of various methods of sterilization and disinfection of microbes.</p> <p>Module 26: to understand types and mechanism of fermentation.</p> <p>Module 27: To know the application of microbiology in environment.</p>	
<p>Fishery science 2: Capture and culture fisheries</p>	<p>ZOL4E11</p>	<p>To understand the general methods of rearing of aquatic organisms and their capture</p>	<p>Module 1: To have a introductory knowledge of capture and culture fisheries.</p> <p>Module 2: To know the major river, lake and estuarine systems in india.</p> <p>Module 3: To know the history, scope, definition and importance of aquaculture.</p> <p>Module 4: To know about the design and construction of aqua farms and hatcheries.</p> <p>Module 5: To understand the feeding habits and food utilization in fishes.</p> <p>Module 6: To understand the water quality management parameters, techniques and strategies.</p> <p>Module 7: To understand the reproduction and genetic selection methods in fishes.</p> <p>Module 8: To study the methods of control of weeds, pests and</p>	<p>PSO4</p>

			<p>predators.</p> <p>Module 9: To know about various aquaculture practices.</p> <p>Module 10: To know in detail the methods involved in the maintenance and preparation of aquarium.</p> <p>Module 11: To know about various viral, bacterial and fungal diseases.</p>	
<p>Fisheries science 3 :Harvesting, Post-harvesting Technology &Marketing</p>	ZOL4E12	<p>To understand the general procedures involved in harvesting and post harvest technologies.</p>	<p>Module 1: To understand the history of commercial fishing methods and crafts and gears used for harvesting.</p> <p>Module 2: To know about the chemical composition in fish muscle and their nutritive value.</p> <p>Module 3: To study the types of fish spoilage-microbial, enzymatic and biochemical.</p> <p>Module 4: To know about the handling of fresh fish on shore.</p> <p>Module 5: To study in detail the methods and techniques or processing and preservation of fish and fish products.</p> <p>Module 6: To have an overview of methods involved in the processing of shrimps.</p> <p>Module 7: To have an overview of the methods involved in the processing of lobsters.</p> <p>Module 8: To have an overview of the</p>	

			<p>methods involved in the processing of cephalopods.</p> <p>Module 9: To study various fish by-products.</p> <p>Module 10: To have an insight to the fish processing plants and cold storage.</p> <p>Module 11: To know the various fundamental aspects of quality control.</p> <p>Module 12: To know about the methods of packing and export of seafood.</p> <p>Module 13: To have an overview about fishery education, research, development and export promotion agencies.</p>	
	PRACTICALS			
Biochemistry, Biophysics and Biostatistics	ZOL2L01			1 st and 2 nd semester
Physiology, Molecular biology and Cytogenetics	ZOL2L02			1 st and 2 nd semester
Ecology, Ethology, Systematics and Evolution	ZOL2L03			1 st and 2 nd semester
Immunology, Developmental biology, Endocrinology, Biotechnology, Microbiology and Microtechnique	ZOL4L04			3 rd and 4 th semester
Fishery science 1 and 2	ZOL4L05			3 rd and 4 th semester
Fishery science 3	ZOL4L06			3 rd and 4 th semester

PROGRAMME OUTCOMES OF B.VOC TOURISM AND HOSPITALITY MANAGEMENT

Tourism is the Second largest industry in the world and it is also a highly labour intensive industry. Even Kerala tourism industry needs One Lakh skilled tourism professionals every year.

B.Voc THM – Career opportunities

Travel Agency- Ticketing Executive, Receptionist, Reservation Manager,
Travel Agency Manager

Tour Operator- Tour Executive, Tour Guide, Tour Manager, Tour Consultant

Air Port- Ground Staff, Customer Care Executive, Air Hostess, Cabin Crew,
Ticketing Agent

Hotel/Resort- Receptionist, Reservation Manager, Meet and Greet Executive.

There are also opportunities in Government organisations like ITDC, KTDC,
and DTPC etc.

COURSE OUTCOMES OF B.VOC TOURISM AND HOSPITALITY MANAGEMENT

SEMESTER 1

GEC1FT03 Fundamentals of Tourism

SDC1IT16 Information Technology for Tourism Business

SDC1HM17 Hospitality Management

SDC1GS18 Guiding Skills for Tourism

These are the subjects which included in first semester and after successful completion of these subjects the students are able to perform following positions

1. Reservation Desk Executive
2. Tour Escort
3. Billing Executive
4. Heritage Tour Guide
5. Counter Sales Executive

SEMESTER 2

GEC2PP06 Tourism Principles and Practices

SDC2TO20 Travel Agency and Tour Operation Management

SDC2FA21 Financial Accounting

SDC2EM22 – Event Management

These are the subjects which included in second semester and after successful completion of these subjects the students are able to perform following positions

1. Meeting, Conference & Event Planner
2. Front Office Executive
3. Ticketing Consultant
4. Transport Coordinator
5. Guesthouse Caretaker

SEMESTER 3

GEC3PM09 Principles of Management

SDC3CH24 Cultural History and Tourism Resources of Kerala

SDC3TC25 Tour Packaging and Costing

SDC3HR26 Human Resource Management

These are the subjects which included in Third semester and after successful completion of these subjects the students are able to perform following positions

1. Team Leader
2. Property Management Executive
3. Tour Manager

SEMESTER 4

GEC4ET12 Eco Tourism

SDC4FO28 FRONT OFFICE OPERATIONS

SDC4AF29 Air Fares and Ticketing

SDC4ED30 Entrepreneurship Development

These are the subjects which included in Fourth semester and after successful completion of these subjects the students are able to perform following positions

1. Team Leader
2. Guest Relation Manager

SEMESTER 5

GEC5MT13 Principles of Marketing

GEC5BR14 Business Regulatory Framework for Tourism

GEC5TM15 Transportation Management

SDC5TP32 Tourism Products of India

SDC5ET33 Emerging Trends in Tourism

SDC5PO34 Tourism Policy and Planning

These are the subjects which included in Fifth semester and after successful completion of these subjects the students are able to perform following positions

1. Transport Duty Management
2. Assistant Facility Manager

PREAMBLE

The University Grants Commission (UGC) has launched a scheme on skills development based higher education as part of college/university education, leading to Bachelor of Vocation (B.Voc.) Degree with multiple exits such as Diploma/Advanced Diploma under the NSQF. The B.Voc. programme is focused on universities and colleges providing undergraduate studies which would also incorporate specific job roles and their NOSs alongwith broad based general education. This would enable the graduates completing B.Voc. to make a meaningful participation in accelerating India's economy by gaining appropriate employment, becoming entrepreneurs and creating appropriate knowledge.

The B. Voc. Programme is designed to bridge the potential skill gap identified. The curriculum in each of the years of the programme would be a suitable mix of general education and skill development components. The general education component provides emphasis to Communication skill, Presentation skill, Health and Safety, Industrial Psychology, Environmental awareness, Entrepreneurship development and other relevant subjects in the field. General Education Components should not exceed 40% of the curriculum. Skill Development Component should match the skill gap identified at least 50% of Skill Development Component should be allotted to practical and can grow up to 60% based on the nature of the course. The practical component can be carried out in the college and/or the industry partner premises.

B.Voc. Pharmaceutical chemistry is a graduate programme which disciplines at the intersection of chemistry, especially synthetic organic chemistry and pharmacology and various other branch of biological specialities where it involves design, chemical synthetics and development for market of pharmaceutical agents(drugs).

Most pharmacy degrees combine academic research with more vocational training and professional pharmacy skills, such as learning about legal and ethical issues and they will learn all about prescriptions, drugs, medications and clinical practice, and practice responding to different scenarios.

An effective science education can be imparted at the undergraduate level only by revamping the curriculum according to the needs and developments of the modern society from time to time. To achieve this goal, the curriculum should be restructured by giving emphasis on various aspects such as the creativity of students, knowledge of current developments in the discipline, awareness of environmental impacts due to the development of science and technology, and the skills essential for handling equipments and instruments in laboratories and industries.

It is essential to ensure that laboratory chemicals are used at a minimal level without affecting the skill and understanding aimed through laboratory sessions. The change brought about in the present scheme makes use of micro scale techniques and double burette titrations. This has been done without any conceptual deviation from the principles of experiments. This method not only reduces the expenditure on chemicals but also creates an environmental awareness among the students and pollution free atmosphere in the campus.

This scheme saves time and energy of students while performing the experiments.

The units of the syllabus are well defined. The number of contact hours required for each unit is also given. A list of reference books is provided at the end of each course.

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Aims

This curriculum has been prepared with the objective of giving sound knowledge and understanding chemistry of pharmacy to undergraduate students. The goal of the syllabus is to equip students with the potential to contribute to academic and industrial environments. This curriculum will expose students to various fields of pharama and

develop interest in related disciplines.

Broad Objective

The B. Voc courses are designed with the following objectives,

- To provide judicious mix of skills relating to a profession and appropriate content of General Education.
- To ensure that the students have adequate knowledge and skills, so that they are work ready at each exit point of the programme.
- To understand basic facts and concepts in Pharmaceutical chemistry as well as in chemistry.
- To develop the ability for applying the principles of chemistry in drug synthesis
- To develop skills in the proper handling of instruments and chemicals.
- To be exposed to the different processes used in industries and their applications.
- To make the students eco-friendly by creating a sense of environmental awareness in them.
- To provide flexibility to the students by means of pre-defined entry and multiple exit points.
- To integrate NSQF within the undergraduate level of higher education in order to enhance employability of the graduates and meet industry requirements. Such graduates apart from meeting the needs of local and national industry are also expected to be equipped to become part of the global workforce.

COURSE OUTCOME

NAME OF THE COURSE	COURSE CODE	COURSE OUTCOMES	PSO ADDRESS ED
SEMESTER 1			
INTRODUCTION TO COMMUNICATION	BMM1B01	MODULE 1: Provide knowledge about evolution of human communication, definition and elements of communication.	PSO1
INTRODUCTION TO COMMUNICATION	BMM1B01	MODULE 2: Provide knowledge about communication process and different forms of communication.	PSO1
INTRODUCTION TO COMMUNICATION	BMM1B01	MODULE 3: Provide knowledge about communication process and different models of communication.	PSO1
INTRODUCTION TO COMMUNICATION	BMM1B01	MODULE 4: Provide knowledge about functions and effects of communication, audience media interaction factors- perceptual psychology, individual difference, social relations, group influence, uses and gratifications theory, selectivity in communication.	PSO1
INTRODUCTION TO COMPUTER	BMM1C01	MODULE 1: Provide knowledge about Computer basics, communication devices, operating systems, cross-platforms, problems and solutions, workstations and networks.	PSO1
INTRODUCTION TO COMPUTER	BMM1C01	MODULE 2: Provide knowledge about analog and digital principles, image and video formats, resolutions and pixels, internet and mobile communication technology, wireless network technologies,etc	PSO1
INTRODUCTION TO COMPUTER	BMM1C01	MODULE 3: Provide knowledge about ms-office, ms-word, spreadsheet , powerpoint and excel basics.	PSO1

INTRODUCTION TO COMPUTER	BMM1C01	MODULE 4: Provide knowledge about types of graphic card, fire wire card, types of audio card, studio monitors, external sound cards, VGA splitter, VGA to HDMI converter, HDMI input and output, RCA cables, MIDI cables, VGA Switch, fire wire cable, meaning and scope of the internet, surfing the net, sending and receiving e-mails using outlook express and hosting websites, WWW browsing , downloading and uploading to the internet and online journalism.	PSO1
Media Laws and Ethics	BMM1C02	MODULE 1: Provide knowledge about legal concepts, judicial systems in India, fundamental rights, directive principles, freedom of the press, etc.	PSO1
Media Laws and Ethics	BMM1C02	MODULE 2: Provide knowledge about defamation-libel, slander and defenses of media professional	PSO1
Media Laws and Ethics	BMM1C02	MODULE 3: Provide knowledge about various press laws.	PSO1
Media Laws ðics	BMM1C02	MODULE 4: Provide knowledge about different applications for communication purpose .	PSO1
Media Laws and Ethics	BMM1C02	MODULE 5: Provide knowledge about various media ethics and issues.	PSO1
SEMESTER 2			
Creativity and design skills	BMM2B02	MODULE 1: Provide knowledge about creativity, creative skills, creativity factors, tools of creativity, art and science of creativity.	PSO2
Creativity and design skills	BMM2B02	MODULE 2: Provide knowledge about design skills, concepts, principles, traditional and modern designs and basic designs for cards, posters, brochures, newspapers, magazines and advertisements.	PSO2
Creativity and design skills	BMM2B02	MODULE 3: Helps to understand various drawing skills, drawing living and non-living objects, drawing backgrounds, adding depth and perspective, use of colors and tones and color sense.	PSO2

Creativity and design skills	BMM2B02	MODULE 4: Provide knowledge about color theory, color mixing and color wheel.	PSO2
Fundamentals of Multimedia	BMM2C03	MODULE 1: Provide knowledge about multimedia, its elements, features and applications.	PSO2
Fundamentals of Multimedia	BMM2C03	MODULE 2: Provide knowledge about multimedia file formats, standards, data compression techniques, typography, fonts, font formats, hypertext, communication protocols.	PSO2
Fundamentals of Multimedia	BMM2C03	MODULE 3: Provide knowledge about digital still photography, image authoring and editing tools, application wise Photoshop, image file formats, contrast, brightness, hue, slicing, aspect ratio, gray scale, filters, image enhancing designing techniques.	PSO2
Fundamentals of Multimedia	BMM2C03	MODULE 4: Provide knowledge about video in multimedia, analog and digital signals, video shooting, capturing and editing, video storage formats, sound in multimedia, characteristics, acoustics, recording techniques, mixing and mastering and audio storing formats.	PSO2
Introduction to cinema	BMM2C04	MODULE 1: Provide knowledge about history of cinema, evolution of sound films and various major cinema movements.	PSO2
Introduction to cinema	BMM2C04	MODULE 2: Provide knowledge about film terminology, characteristics, potentials and limitations of cinema, types of films, defining film and film language	PSO2
Introduction to cinema	BMM2C04	MODULE 3: Provide knowledge about pre-production, production, and post-production process of film	PSO2

Introduction to cinema	BMM2C04	MODULE 4: Provide knowledge about comprehensive overview of Malayalam cinema	PSO2
SEMESTER 3			
Media Publishing	BMM3B03	MODULE 1: Provide knowledge about printing technology, printing organization, various printing process and terminologies.	Pso3
Media Publishing	BMM3B03	MODULE 2: To understand the typographical skills in Multimedia	Pso3
Media Publishing	BMM3B03	MODULE 3: Provide knowledge about Indesign features and applications, pages, web documents, color processing, master page setting, spreads, paste boards, page designi ng, handling documents tools and options, pre-production, text and graphics management, exporting pdf and other production formats.	Pso3
Media Publishing	BMM3B03	MODULE 4: Provide knowledge about printing production: types of printers, creating books, printing chapters, library, indices, table of contents, style sheets, form and form controls and meta tags	Pso3
Computer Graphics	BMM3BO4	MODULE 1: Provide knowledge about feature and application of Photoshop. File formats, cross platform technology .	Pso3
Computer Graphics	BMM3BO4	MODULE 2: Provide knowledge about feature and application of illustrator, vector and raster images, resolution in images, illustrator environment, documents, working with colors.	Pso3

Computer Graphics	BMM3BO4	<p>MODULE 3:</p> <p>Provide knowledge about feature and application of drawing software, interface, toolbox, common tasks, creating basic shapes, reshaping objects, applying color fills and outlines. Helps to understand text tools, text formatting, embedding objects into text, text wraps, text object links.</p>	Pso3
Computer Graphics	BMM3BO4	<p>MODULE 4:</p> <p>Provide knowledge about applying effects, scripts, additional plugins, types effects in designing.</p>	Pso3
Digital Photography	BMM3C05	<p>MODULE 1:</p> <p>Provide knowledge about history of Photography; role of Photography in communication and journalism; nature, scope and functions of Digital Photography; Understanding the basic information o camera .</p>	Pso3
Digital Photography	BMM3C05	<p>MODULE 2:</p> <p>Provide knowledge mounting equipments of camera . familiarize the technical side of camera .</p>	Pso3
Digital Photography	BMM3C05	<p>MODULE 3:</p> <p>Provide knowledge about understanding the camera; types of cameras – analog and digital; lenses, films and filters; Focusing, shutter speed, aperture, depth of field; Rules of composition.</p>	Pso3
Digital Photography	BMM3C05	<p>MODULE 4:</p> <p>Understand the lighting technology in film and types of light uses in various film making productions.</p>	Pso3
Design and Pagation	BMM3C06	<p>MODULE 1:</p> <p>Provide knowledge about pagination, typography for legibility, harmony and white space. Helps to understand the difference between makeup and design. Also helps to understand principles of artistic .</p>	Pso3
Design and Pagation	BMM3C06	<p>MODULE 2:</p> <p>Provide knowledge about principles of page makeup, mechanics of dummies, positioning, vertical and horizontal makeup and flexibility; dos and don'ts of good layout Traditional and contemporary make-up concepts.</p>	Pso3

Design and Pagnation	BMM3C06	MODULE 3: Provide knowledge about front page makeup; inside news page makeup; sports page makeup; edit-page makeup; lifestyle page makeup; special page makeup; Sunday magazine page makeup	Pso3
Design and Pagnation	BMM3C06	MODULE 4: Provide knowledge about special effects – wraparounds and skews, photo cutouts, mortises and insets, screens and reverses, display headlines, Color, info-graphics, cartoons and caricature Design and pagnation software’s –Corel Draw and InDesign.	Pso3
SEMESTER 4			
Scripting for media	BMM4B05	MODULE 1: Understand film script and script writing technologies. Film script writing process.	Pso3
Scripting for media	BMM4B05	MODULE 2: Provide knowledge about television Script, advertisements, game show, variety programmes, information programmes, children, women and minority programmes. Helps to understand script layout, concept of spoken language, relations between narration and visuals. Also provide information about the conversion of script to storyboard, planning and objectives of storyboard, organizing elements and storyboard style for multimedia projects.	Pso3
Scripting for media	BMM4B05	MODULE 3: Provide knowledge about art of writing for films; Fundamentals of film screen writing, character formations and dialogue formation.	Pso3
Scripting for media	BMM4B05	MODULE 4: Helps to understand film genres, language of film and TV , Understand the idea of programmes. Pre-production stage effectiveness.	Pso3
Introduction to videography	BMM4B06	MODULE 1: Provide knowledge about fundamentals of handling video camera systems – lenses, recorders, tripods/pedestals, dollies, cranes, cables.	Pso3

Introduction to videography	BMM4B06	MODULE 2: Provide knowledge about shot types, Shot composition; Proportion; Rule of thirds; Framing; Pictorial balance; Continuity; Light positions; Taking different shots to convey idea(s), meaning and relationships; Master shots/establishing shot; Point of view shots; Cut-away shots; Retakes	Pso3
Introduction to videography	BMM4B06	MODULE 3: Provide knowledge about camera Lenses- aperture, focal length, lens angle and image size; Video gain; Exposure, Color balance; DV Cam, Video signals, video recorders, Camera control units(CCU), Camcorders and multiple camera shoot.	Pso3
Introduction to videography	BMM4B06	MODULE 4: Provide knowledge about lighting, basic light sources, shading devices; filters,, Light meters; matching outdoor- and indoor-light. Lighting techniques to create mood, time period and special effects.	
Fundamentals of web designing	BMM4B07	MODULE 1: To understand the internet and web based tools, web posters and web writing styles .Helps to study the principles web designing.	Pso4
Fundamentals of web designing	BMM4B07	MODULE 2: To provide knowledge about HTML and HTML tags in web designing	Pso4
Fundamentals of web designing	BMM4B07	MODULE 3: Provide knowledge about User interface design with Adobe Photoshop- Webpage layout- Header banner Design	Pso4
Fundamentals of web designing	BMM4B07	MODULE 4: Provide information about style sheets in web designing especially CSS Styling web designing.	Pso4

Multimedia Journalism and e-content development	BMM4C07	<p>MODULE 1:</p> <p>Provide information about online journalism, portals, blog writing, social media, e-zines, e-journals, e-newspaper, IMDB, you tube, web 3.0. Essentials of writing for web, hypertext, web archives, search options, search engines, optimizations and multimedia content development.</p>	Pso4
Multimedia Journalism and e-content development	BMM4C07	<p>MODULE 2:</p> <p>Provide information about writing and reporting live use of mobile devices in online journalism, interactive communication, user-generated content, content uploading and content management system.</p> <p>Also helps to understand citizen journalism, IPR, Professional ethics, free and open source software and privacy copyright act.</p>	Pso4
Multimedia Journalism and e-content development	BMM4C07	<p>MODULE 3:</p> <p>Provide information about E-Content Development, its types, tools, scopes and career opportunities.</p> <p>Helps to understand basics of E-Content Development, storyboarding for e-content and e-content development cycle.</p>	c
Multimedia Journalism and e-content development	BMM4C07	<p>MODULE 4:</p> <p>Provide information about Instructional Strategy for e-content development, learner engagement, types of interactivity for e-content, presentation strategies and different ways of delivering e-content.</p>	Pso4
Advertising	BMM4C08	<p>MODULE 1:</p> <p>Provide information about advertising and its types, functions, features and evolution.</p> <p>Also helps to understand social and ethical issues of advertising.</p>	Pso4
Advertising	BMM4C08	<p>MODULE 2:</p> <p>Provide information about Media planning and Ad campaign</p>	Pso4
Advertising	BMM4C08	<p>MODULE 3:</p> <p>Provide information about Brand awareness and attitudes, brand identity, brand equity, brand image, brand loyalty and Rossiter-Percy Model.</p>	Pso4

Advertising	BMM4C08	MODULE 4: Helps to understand the advertising technology for communication .Ad functions and process in society.	Pso4
SEMESTER 5			
Techniques of post-production-visual editing	BMM5 B08	MODULE 1: Provide information about basics of video signals; signal-noise ratio; video standards; analog and digital video; video for TV and Web Video in multimedia. Also helps to understand digital era editing, various types of cutting, editing styles in advertising, dramatic scene editing and dramatic continuity.	Ps05
Techniques of post-production-visual editing	BMM5 B08	MODULE 2: Provide information about basics of video production techniques and technologies; Visual recording equipment, Light fixtures, basics of Video editing, editing equipment and software.	Ps05
Techniques of post-production-visual editing	BMM5 B08	MODULE 3: Provide information about Final Cut Pro- features and characteristics; importing and organizing video clips.	Ps05
Techniques of post-production-visual editing	BMM5 B08	MODULE 4: Provide information about features of AVID, Video editing techniques and various functions and operations in AVID.	Ps05
Techniques of post-production-Sound recording,editing and mastering	BMM5 B09	MODULE 1: Provide information about sound, sound characteristics, sound perception, types of microphones, pickup patterns, basic set-up of recording system, sound file extensions, analog to digital conversions and various other terms used in sound.	Ps05
Techniques of post-production-Sound recording,editing and mastering	BMM5 B09	MODULE 2: To understand the Audio studio equipment ,introducing the software for sound recording ,Pro tools.	Ps05

Techniques of post-production-Sound recording,editing and mastering	BMM5 B09	MODULE 3: Provide information about Nuendo; file formats; data selection; recording audio; Audio special effects ,Plug ins for recording and various other terms.	Ps05
Techniques of post-production-Sound recording,editing and mastering	BMM5 B09	MODULE 4: Provide information about Sound track creative use of sound track special usage of head phone and head mixers in recording.	Ps05
Introduction to 3D modelling and texturing	BMM5 B10	MODULE 1: Provide information about Introduction to 3D Modeling-History of 3D Animation .	Ps05
Introduction to 3D modelling and texturing	BMM5 B10	MODULE 2: To provide information about basic modeling concepts and practical .	Ps05
Introduction to 3D modelling and texturing	BMM5 B10	MODULE 3: Understand the texturing concepts in 3d objects	Ps05
Introduction to 3D modelling and texturing	BMM5 B10	MODULE 4: Provide information about UV map in UV Texture using UV layout tools like unfold for flattening UV's over mesh to create flat 2dimensional map using commands.	Ps05
Advanced web designing	BMM5 B11	MODULE 1: Provide information about Adobe Dreamweaver with CSS features and Usage, Creating and Managing CSS, and various terms used in web designing	Ps05
Advanced web designing	BMM5 B11	MODULE 2: Provide information about jquery. Functions and various operations using jquery.	Ps05
Advanced web designing	BMM5 B11	MODULE 3: Provide information about introduction to authoring tools for 2D animation and introduction to adobe Edge Code CC	Ps05

Advanced web designing	BMM5 B11	MODULE 24: Provide information about testing a website, site launch, validating web pages, trouble shooting. Also helps to understand server model, creating dynamic pages moving website in internet, password and protection of web pages.	Ps05
Audio and Video editing project	BMM5 B12	To prepare a multimedia projects	Ps05
Introduction to multimedia(for other students)	BMM5 D01	MODULE 1: Provide information about Multimedia, multimedia system, elements and its applications. Multimedia system architecture. Evolving systems of multimedia. Digital media and hyper media.	Ps05
Introduction to multimedia(for other students)	BMM5 D01	MODULE 2: Provide information about Multimedia file formats, standards, communication protocols, conversions Data compression and decompression. Types and methods of compression and decompression.	Ps05
Introduction to multimedia(for other students)	BMM5 D01	MODULE 3: Provide information about Image authoring and editing tools, image file formats, Layers, RGB, CMYK; contrast, brightness, HUE, Slicing, Contrast and aspect ratio, gray scale filters, blending tools and image enhancing designing techniques.	Ps05
Introduction to multimedia(for other students)	BMM5 D01	MODULE 4: Provide information about introduction to 2D animation.	Ps05
SEMESTER 6			
Multimedia designing and authoring	BMM6 B13	MODULE 1: Provide information about Multimedia applications in business, education and entertainment. And also about the roles of multimedia team project manager, designer, writers, video/audio specialists and multimedia programmers.	PSo6
Multimedia designing and authoring	BMM6 B13	MODULE 2: Provide the information about Multimedia production.	PSo6

Multimedia designing and authoring	BMM6 B13	MODULE 3: To understand the Multimedia authoring tools and structured programming and techniques. And also about Adobe Edge animate.	PSo6
Multimedia designing and authoring	BMM6 B13	MODULE 4: To understand the Flash and Production in the industry in flash usages , CD Rom delivery.	PSo6
Introduction to motion graphics	BMM6 B14	MODULE 1: Provide the information about Introduction to Motion graphics and its history	PSo6
Introduction to motion graphics	BMM6 B14	MODULE 2: Provide the information about Introduction to Adobe After effects and its functions.	PSo6
Introduction to motion graphics	BMM6 B14	MODULE 3: Provide the information about Adobe After effects- Layers- Compositions- Video standards- camera movements- titling- Particle emitters- Advanced Colour corrections- import video and PSD	PSo6
Introduction to motion graphics	BMM6 B14	MODULE 4: Provide the information about Colour Correction; Colour Correction Features and applications .	PSo6
Introduction to motion graphics	BMM6 B14	MODULE 5: Provide the information about various functions and operations in Adobe After effects	PSo6
Television production(digital media)	BMM6 B15	MODULE 1: Provide the information about Concepts creation in television production and its various terminologies.	PSo6

Television production(digital media)	BMM6 B15	MODULE 2: Provide the information about Media Research; Importance and types of research. Helps to understand various terminologies used in media research.	PSo6
Television production(digital media)	BMM6 B15	MODULE 3: Provide the information about Production planning, pre-production planning, duties and responsibilities of production team members.	PSo6
Television production(digital media)	BMM6 B15	MODULE 4: Provide the information about Anchoring and safety measures: role and responsibilities of anchor person, post production editing, special effects, chroma key usage, economy shooting methods and various other terminologies.	PSo6
Advanced 3D animation, Vfx and compositing	BMM6 B16	MODULE 1: Provide the information about Principles of animation , types of animation and various animation production terminologies.	PSo6
Advanced 3D animation, Vfx and compositing	BMM6 B16	MODULE 2: Provide the information about Camera Animation, Path Animation, Motion Capturing, morphing and wrapping. Also helps to understand the use of graph editor, basics of rigging, facial animation, character animation, walk cycle, run cycle and cycle animation with animals.	PSo6
Advanced 3D animation, Vfx and compositing	BMM6 B16	MODULE 3: Provide the information about light & its theory, and different functions and operations in maya.	PSo6
Advanced 3D animation, Vfx and compositing	BMM6 B16	MODULE 4: Provide the information about various Special effects used in maya	PSo6
Multimedia Project	BMM6 B17	To practicalize production through multimedia technology and familiarize multimedia equipments.	PSo6
Website Project	BMM6 B18	To practicalize web designing tools for industrial productions and produced a website	PSo6

NAME OF THE COURSE	COURSE CODE	COURSE OUTCOMES	PSO ADDRESSED
SEMESTER 1			
INTRODUCTION TO DIGITAL MEDIA	BMM1B01	MODULE 1: Provide knowledge about basics and history of computer, To understand MS(word, excel,powerpoint) and photo editing(adobe photoshop)	PSO1
INTRODUCTION TO COMMUNICATION	BMM1B01	MODULE 2: Provide knowledge about basics of internet.	PSO1
INTRODUCTION TO COMMUNICATION	BMM1B01	MODULE 3: Provide knowledge about journalism and digital media.	PSO1
INTRODUCTION TO COMMUNICATION	BMM1B01	MODULE 4: Provide knowledge about web portals, data journalism,and provide information about various softwares.	PSO1
SEMESTER 4			
INTRODUCTION TO CINEMATOGRAPHY	BMM4B06	MODULE 1: Provide knowledge about 5'C of cinematography and helps to understand various terminologies in cinematography.	PSO4
INTRODUCTION TO CINEMATOGRAPHY	BMM4B06	MODULE 2: Provide knowledge about various shots in cinematography.	PSO4
INTRODUCTION TO CINEMATOGRAPHY	BMM4B06	MODULE 3: Provide knowledge about camera lens and its various terminologies and functions.	PSO4
INTRODUCTION TO CINEMATOGRAPHY	BMM4B06	MODULE 4: Provide knowledge about lighting, types of lighting, shading devices, filters, light meters and various lighting techniques.	PSO4

UG Programme

1. Programme outcome

1. Critical Thinking: Take informed actions after identifying the assumptions that frame Students' thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at their ideas and decisions (intellectual, organizational, and personal) from different perspectives.
2. Problem Solving: Understand and solve problems of relevance to society to meet the specified needs using the knowledge, skills and attitudes acquired.
3. Effective Communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.
4. Effective Citizenship: Demonstrate empathetic social concern and equity centered national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.
5. Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.
6. Self-directed and Life-long Learning: Acquire the ability to engage in independent and lifelong learning in the broadest context of socio-technological changes

2. Programme specific outcomes

Scope and importance of Botany: Understand scope and importance of Botany in every field especially in dealing with societal and environmental issues, agriculture, ethics and healthcare.
2. Environmental concern: Understand the and the role of plants in sustaining life on earth and the interrelationship between human beings and nature, create awareness on natural resources and their importance in sustainable development, analyze the importance of biodiversity conservation, estimate biodiversity loss and develop conservation strategies.
3. Scientific temper: Develop scientific temper and undertake scientific projects.
4. Practical applications: Identify and classify plants according to the principles of plant systematics, apply techniques like plant propagation methods, organic farming, mushroom cultivation, preparation of biofertilizers, biopesticides etc. in daily life.
5. Awareness on life processes: Understand plant life processes, biomolecules, basic hereditary and evolutionary principles

3. Course outcomes

Sl No.	Core Course	Course Outcome	PSO Addressed
1	Core Course I- BOT1B01T- ANGIOSPERM ANATOMY, REPRODUCTIVE BOTANY AND PALYNOLOGY	<p>Module I- Understand the Basic structure of plant cell wall and non-living inclusions of plants and their significance</p> <p>Module II- Differentiate tissues and their functions.</p> <p>Module III- Demonstrate the ability to differentiate plant organs by observing anatomical features.</p> <p>Module IV- Illustrate primary and secondary (normal and anomalous) structures of plant organs. Explain various developmental details of angiosperms.</p> <p>Module V- Realize the significance and applications of palynology.</p>	1
2	Core Course II- BOT2B02T- MICROBIOLOGY, MYCOLOGY, LICHENOLOGY AND PLANT PATHOLOGY	<p>Module I- Microbiology- Understand basics of microbial life, Diversity of microorganisms and their economic importance. Analyze the ecological role played by bacteria, fungi and lichens.</p> <p>Module II- Mycology- Develop general awareness on the diversity of fungi their general characters, distribution and economic importance</p> <p>Module III- Lichenology- Develop general awareness on the diversity and economic importance of lichens</p> <p>Module IV- Plant pathology- Identify plant diseases and find out control measures. Realize the significance of plant diseases as far as crop production is concerned.</p>	1,2
3	Core Course III- BOT3B03T- PHYCOLOGY,	Module I- Appreciate the diversity and evolutionary	1.2

	BRYOLOGY AND PTERIDOLOGY	<p>significance of lower plant groups. Classify and understand the economic and ecological importance algae.</p> <p>Module II- Classify and understand the economic and ecological importance bryophytes</p> <p>Module III- Classify and understand the economic and ecological importance pteridophytes.</p>	
4	Core Course IV- BOT4B04T- METHODOLOGY AND PERSPECTIVES IN PLANT SCIENCE	<p>Module I- Develop scientific temper and problem solving skills.</p> <p>Module II- Undertake scientific projects and prepare project reports</p> <p>Module III- Summarize, organize and display quantitative data and derive conclusions</p> <p>Module IV- Prepare permanent slides, applying the histochemical techniques</p>	3
5	Core Course VI- BOT5B06T GYMNOSPERMS, PALAEOBOTANY, PHYTOGEOGRAPHY AND EVOLUTION	<p>Module I- Understand the role of gymnosperms as a connecting link between pteridophytes and angiosperms</p> <p>Module II- Paleobotany- Realize the importance of fossil study. Understand the climatic conditions of the past and realize the changes happened</p> <p>Module III- Recognize the phytoecographic zones of India</p> <p>Module IV- Evolution- Appreciate the process of organic evolution</p>	3
6	Core Course VII- BOT5B07T ANGIOSPERM MORPHOLOGY AND SYSTEMATICS	<p>Module I- Angiosperm morphology Appreciate the diverse morphology of angiosperms. Make scientific illustrations of vegetative and reproductive structures of plants.</p> <p>Module II- Systematics- Identify and classify plants based on taxonomic principles. Develop the skill of scientific imaging of plants. Realize the importance of</p>	

		field study. Change their attitude towards over exploitation of rare/ endemic plants.	
7	Core Course VIII- BOT5B08T- TISSUE CULTURE, HORTICULTURE, ECONOMIC BOTANY AND ETHNOBOTANY	<p>Module I-Plant tissue culture- Understand the principles and techniques employed in tissue culture</p> <p>Module II- Plant tissue culture - Appreciate the various methods and applications of tissue culture. Critically evaluate the advantages of tissue culture over conventional methods of propagation</p> <p>Module III-Horticulture- Understand scope, significance and different parameters of horticulture.</p> <p>Module IV- Horticulture- Understand different propagation methods employed in horticulture</p> <p>Module V- Horticulture- Apply various horticultural practices in the field. Experiment on the subject and try to become entrepreneurs</p> <p>Module VI- Identify the economically important plants.</p>	3
8	Core Course IX- BOT5B09T- CELL BIOLOGY AND BIOCHEMISTRY	<p>Module I-Cell Biology- Appreciate the ultra-structure of a plant cell. Enumerate the functions of each cell organelle.</p> <p>Module II-Understand the basic concept of special type of chromosomes, cell division, chromosomal changes</p> <p>Module III- Draw and explain the structure of biomolecules.</p>	3
9	Core Course X- BOT6B010T- GENETICS AND PLANT BREEDING	<p>Module I- Appreciate the facts behind heredity and variations. Understand the basic principles of inheritance.</p> <p>Module II- Predict the pattern of inheritance. Solve problems related to classical genetics.</p> <p>Module III-Understand the concept of plant breeding and different organisations involving in Plant breeding</p> <p>Module IV- Understand various</p>	

		plant breeding techniques. Realize the role of plant breeding in increasing crop productivity.	
10	Core Course XI- BOT6B011T BIOTECHNOLOGY, MOLECULAR BIOLOGY AND BIOINFORMATICS	<p>Module I- Biotechnology- Analyze the role of biotechnology in daily life.</p> <p>Module II-Biotechnology- Understand the various applications of biotechnology</p> <p>Module III- Understand the new and advanced techniques of IT in learning</p> <p>Module IV-Bioinformatics- Understand the basic aspects of bioinformatics and ethics in use of internet</p> <p>Module V- Understand molecular biology through bioinformatic tools</p> <p>Module IV- Molecular biology Explain the concepts in molecular biology.</p>	3
11	Core Course XII- BOT6B012T- PLANT PHYSIOLOGY AND METABOLISM	<p>Module I- Identify the physiological responses of plants.</p> <p>Module II- Analyze the role of external factors in controlling the physiology of plants.</p> <p>Module III- Explain the metabolic processes taking place in each cell.</p> <p>Module IV-Understand the concepts of plant growth, development and regulators</p> <p>Module V-Appreciate the energy fixing and energy releasing processes taking place in cells</p>	3
12	Core Course XIII- BOT6B013T ENVIRONMENTAL SCIENCE	<p>Module I- Realize the importance of ecological studies.</p> <p>Module II- Realize the importance of ecological studies</p> <p>Module III- Develop environmental concern in all their actions and practise Reduce, Reuse and Recycle. Spread awareness of the need of conservation of biodiversity and natural resources.</p> <p>Module IV- Analyze the reasons for climate change and find out ways to combat it.</p>	3

13	Core Course XIV- BOT6B14T(E1)-ELECTIVE- 1: GENETIC ENGINEERING	<p>Module I- Appreciate the advanced technology- gene cloning</p> <p>Module II- Appreciate various techniques employed in genetic engineering.</p> <p>Module III- Understand the principles of gene cloning. Develop general awareness on genetically modified organisms</p> <p>Module IV- Understand the ethical, social and legal issues associated with genetic engineering.</p>	3,4,5
14	Core Course XIV- BOT6B14T(E2)-ELECTIVE- 2: ADVANCED ANGIOSPERM SYSTEMATICS	<p>Module I- Develop deep knowledge in angiosperm systematics.</p> <p>Module II- Demonstrate ability to identify and classify plants in a faster and better way.</p> <p>Module III- Understand plant nomenclature</p> <p>Module IV- Apply imaging technologies in plant systematic</p>	3,4
15	Core Course XIV- BOT6B14T(E3)-ELECTIVE- 3 : GENETICS AND CROP IMPROVEMENT	<p>Module I- Imparts general awareness about crop genetics</p> <p>Module II- Attain general awareness on various crop research stations of the country</p> <p>Module III- Understand various techniques employed for increasing crop productivity.</p> <p>Module IV- Understand various techniques employed for increasing crop productivity</p> <p>Module V- Identify diseases affecting crop plants.</p>	3,4
16	Complementary Course I- BOT1C01T- ANGIOSPERM ANATOMY AND MICROTECHNIQUE	<p>Module I- Explain the types, structure and functions of plant tissues.</p> <p>Module II- Explain primary and secondary (normal and anomalous) structures of plant organs.</p> <p>Module III- Identify plant organs by observing anatomical features. Illustrate primary and secondary (normal and anomalous)</p>	3

		structures of plant organs. Module IV- Apply the histochemical techniques in laboratory works.	
17	Complementary Course II- BOT2C02T- CRYPTOGAMS, GYMNOSPERMS AND PLANT PATHOLOGY	Module I- Analyze the role of the lower plants in the process of evolution. Module II- Explain the ecological significance of lower plants. Module III- Identify plant diseases and take remedial measures to control them.	2
18	Complementary Course III- BOT3C03T- MORPHOLOGY, SYSTEMATIC BOTANY, ECONOMIC BOTANY, PLANT BREEDING AND HORTICULTURE	Module I- Appreciate the diverse morphology of angiosperms. Module II- Identify and classify plants based on taxonomic principles. Make scientific illustrations of vegetative and reproductive structures of plants Module III- Identify the economically important plants Module IV- Understand the basic principles of plant breeding Module V- Apply various horticultural practices in the field.	3.4
19	Complementary Course IV- BOT4C04T- PLANT PHYSIOLOGY, ECOLOGY AND GENETICS	Module I- Explain the physiological processes in plants. Module II- Understand plant metabolism Module III- Appreciate plant growth Module IV- Realize the importance of ecology. Spread awareness of the necessity of conservation of biodiversity and natural resources Module V- Understand the basic principles of heredity and variation. Solve problems related to classical genetics	3
20	OPEN COURSE –BOT5D01T- CHOICE: 1 GENERAL BOTANY	Module I- Have a general awareness on various branches of plant science. Module II- Identify plants based on plant morphology Module III- Explain primary and secondary (normal and	3

		<p>anomalous) structures of plant organs. Identify plant organs by observing anatomical features. Illustrate primary and secondary (normal and anomalous) structures of plant organs</p> <p>Module IV- Realize the importance of plants in everyday life.</p> <p>Module V- Understand the basic concepts of heredity and variation</p> <p>Module VI- Understand the techniques of plant tissue culture</p> <p>Module VII- Develop environmental concern in all their activities.</p>	
21	<p>OPEN COURSE- BOT5D02T-CHOICE- 2</p> <p>APPLIED BOTANY</p>	<p>Module I- Develop general awareness on applied aspects of Plant science.</p> <p>Module II- Realize the role of plants in everyday life.</p> <p>Module III- Apply vegetative propagation methods in everyday life.</p> <p>Module IV- Realize the economic importance of plants</p>	5
22	<p>OPEN COURSE - BOT5D03T-CHOICE: 3</p> <p>BASIC TISSUE CULTURE</p>	<p>Module I- Understand plant tissue culture as a rapid propagation method.</p> <p>Module II- Understand the techniques of plant tissue culture</p> <p>Module III- Explain the steps involved in tissue culture.</p> <p>Module IV- Realize the applications of plant tissue culture</p> <p>Module V- Understand the concept of transgenic plants</p>	3,4

Post Graduation

1. Programme outcome

<p>1. Critical Thinking: Take informed actions after identifying the assumptions that frame Students' thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at their ideas and decisions (intellectual, organizational, and personal) from different perspectives.</p>
<p>2. Problem Solving: Understand and solve problems of relevance to society to meet the specified needs using the knowledge, skills and attitudes acquired.</p>
<p>3. Effective Communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.</p>
<p>4. Effective Citizenship: Demonstrate empathetic social concern and equity centered national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.</p>
<p>5. Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.</p>
<p>6. Self-directed and Life-long Learning: Acquire the ability to engage in independent and lifelong learning in the broadest context of socio-technological changes</p>

2. Programme specific outcomes

<p>Scope and importance of Botany: Understand scope and importance of Botany in every field especially in dealing with societal and environmental issues, agriculture, ethics and healthcare.</p>
<p>2. Environmental concern: Understand the and the role of plants in sustaining life on earth and the interrelationship between human beings and nature, create awareness on natural resources and their importance in sustainable development, analyze the importance of biodiversity conservation, estimate biodiversity loss and develop conservation strategies.</p>
<p>3. Scientific temper: Develop scientific temper and undertake scientific projects.</p>
<p>4. Practical applications: Identify and classify plants according to the principles of plant systematics, apply techniques like plant propagation methods, organic farming, mushroom cultivation, preparation of biofertilizers, biopesticides etc. in daily life.</p>
<p>5. Awareness on life processes: Understand plant life processes, biomolecules, basic hereditary and evolutionary principles</p>

Course outcomes

Course code Name of the Course	Course outcomes	PSO addressed
BO01CT01-Phycology, Bryology, Pteridology and Gymnosperms	<p>Module I- Phycology- Understand the lower forms of plant diversity and their classification. To study the different classification systems of algae. To understand the biological importance of planktons. To study the algal cytology, reproduction, evolutionary trends in different algal groups.</p> <p>Module II- Bryology- Understand the systems of classification, anatomy, reproduction, life history and economic importance of bryophytes</p> <p>Module III- Pteridology- Understand the systems of classification, anatomy, reproduction, life history and economic importance of pteridophytes</p> <p>Module IV- Gymnosperms-Understand the systems of classification, anatomy, reproduction, life history and economic importance of Gymnosperms and understand the geological time scale</p>	PSO5
BO01CT02-Mycology and Lichenology, Microbiology and Plant Pathology	<p>Module I- Mycology- Understand the systems of classification, anatomy, reproduction, life history and economic importance of fungus and general account on fungus.</p> <p>Module II- Get a basic idea about bacteria, virus and different applications of microbiology</p> <p>Module III- Understand the concepts and principles of plant diseases, symptoms, transmission and control measures</p>	PSO4
BO01CT03-Angiosperm Anatomy, Angiosperm Embryology, Palynology and Lab Techniques	<p>Module I- Angiosperm Anatomy- Understand the concepts, principles and techniques of Angiosperm Anatomy through the study of cell wall, its chemistry and organization, nodal patterns, cambium and its developments. Study the different types of secondary growth.</p> <p>Module II- Angiosperm Embryology- Understand different sporogenesis,</p>	PSO3, PO5

	<p>pollination, fertilization</p> <p>Module III- Palynology- Developemnt of pollens and applications of palynology</p> <p>Module IV- Lab Techniques-Familiarizing different instruments used in biological studies</p>	
BO01CT04- Practicals of Phycology, Bryology, Pteridology, Gymnosperms, Mycology and Lichenology Microbiology, Plant Pathology, Angiosperm Anatomy, Angiosperm Embryology, Palynology and Lab Techniques.	<p>Identification and collection of lower plant forms,</p> <p>Detailed study of different plant diseases</p> <p>Study of anomalous secondary growth in roots & stem</p> <p>Study of anatomy of nodes & leaves of plants</p> <p>Understand double staing and preparation of permanent slides</p>	PSO3
BO02CT05- Cell Biology, Molecular Biology and Biophysics	<p>Module I- Cell Biology- Understand the concepts, Principles and techniques of Cell Biology. Understand various cell interactions and gene regulated cell death and cancer</p> <p>Module II- Molecular Biology-Understand in detail the structure, properties, replication, mutation and molecular evolution of genetic material.</p> <p>Module III- Biophysics- Applications of physics in biological studies through various techniques like chromatography, colorimetry, radiobiology etc</p>	PSO1 PSO5
BO02CT06- Cytogenetics, Genetics, Biostatistics, Plant Breeding and Evolution	<p>Module I- Understand the cytogenetical applications in molecular studies through polyploidy, special chromosomes</p> <p>Module II- Get awareness about the relevance of Mendelism, linkage and applications of genetics in population studies.</p> <p>Module III- Understand the applications of statistics in biological studies. General awareness about different biostatistical techniques like tabulation, presentation of data, range, mean deviation, analysis of variance</p> <p>Module IV- Understand the different plant</p>	PSO3, PSO4

	breeding methods employed in modern agriculture like selection, hybridization, heterosis breeding, mutation breeding Module V- Understand the concept of evolution, geological time scale, theories of evolution including Darwinism	
BO02CT07-Plant Ecology, Conservation Biology, Phytogeography and Forest Botany	Module I- Plant Ecology-Understand the roles of plants, animals and microbes in the sustainability of the environment and their interaction among themselves and deterioration of the environment due to anthropogenic activities Module II- Conservation Biology-Understand the strategies for conservation and afforestation Module III- Phytogeography-Understand the patterns of plant distribution and phytochoria of world and india Module IV- Forest Botany-Understand the influence of forests on environment.	PSO2
BO02CT08- Practicals of Cell Biology, Molecular Biology, Biophysics and Cytogenetics, Genetics, Biostatistics, Plant Breeding, Plant Ecology, Conservation Biology, Phytogeography and Forest Botany	Study of mitosis in root tip cells Study of meiosis in Rheo discolor Working out problems from molecular genetics Preparation of karyotype and ideogram of plant meristematic cells Solve problems from genetics Practice of hybridization techniques in plants Estimation of dissolved oxygen content in the water Study of major and minor forest products of Kerala Identification of the various floristic and vegetational regions of the World and India in maps	PSO1, PSO4
BO03CT09 - Plant Physiology, Metabolism and Biochemistry	Module I- Plant Physiology- Understand different physiological activities taking place in plants including photosynthesis, translocation, photomorphogenesis	PSO5

	<p>Module II- Metabolism- Understand various metabolic activities and compounds taking place in metabolism</p> <p>Module III- Biochemistry-Understand the molecular logic of life and molecular interactions among different components inside the cell.</p>	
BO03CT10- Angiosperm Morphology, Angiosperm Taxonomy and Plant Resources	<p>Module I- Angiosperm Morphology- Understand the current ideas on the origin of angiosperm and angiosperm flowers</p> <p>Module II- Angiosperm Taxonomy- Understand the principles of taxonomy, classification and modern trends in taxonomy</p> <p>Module III- Plant Resources-Understand the economically useful plants and products like pulses, fats, oils, beverages and rubber.</p>	PSO1, PSO4
BO03CT11- Biotechnology and Bioinformatics	<p>Module I- Plant Tissue culture – Understand the basic concepts of plant tissue culture and basic laboratory facilities and medium for tissue culture</p> <p>Module II - Genetic engineering-Understand the various molecular analysis techniques, recombinant DNA technology, cloning, patenting</p> <p>Module III- Computer application-Understand the applications of computer aided technologies in the field of biosciences</p> <p>Module IV- Understand and apply bioinformatic tools to study the various functional categories of micro and macromolecules.</p>	PSO3, PSO4
BO03CP12-Practicals of Plant Physiology, Metabolism, Biochemistry, Angiosperm Morphology and Angiosperm Taxonomy Plant Resources,	<p>Determination of water potential by tissue weight change method</p> <p>Separation of leaf pigments by paper chromatography</p> <p>Testing of seed viability by TTC test</p> <p>Study of diagnostic features of different plant families.</p>	PSO3, PSO4

Biotechnology and Bioinformatics		
BO04ET13- Environmental Biology and Biodiversity conservation	<p>Module I- Understand the population and community ecology</p> <p>Module II- study the major global environmental challenges, global initiatives and various national and international environmental laws</p> <p>Module III- To understand the concept of biodiversity and biodiversity information management and communications</p> <p>Module IV- To get a brief idea about sustainable development, wetland, mangroves and forest types of Kerala</p> <p>Module V- A brief study of climate change and its impact and disaster management</p>	PSO2
BO04ET14-Genetic Engineering	<p>Module I- Understand Recombinant DNA technology and gene transfer techniques in plants</p> <p>Module II- To make general awareness on molecular markers and DNA sequencing methods</p> <p>Module III- Understand applications of genetic engineering, transgenic plants and gene therapy</p> <p>Module IV – Get a basic idea about nanotechnology and its application in genetic engineering</p>	PO3
BO04ET15-Genetics and Crop improvement	<p>Module I- Understand conventional and modern methods of plant breeding</p> <p>Module I- Understands the genetics of physiological processes in plant cells</p> <p>Module I- Understand the merits and demerits of genetically modified plants</p>	PO4
BO04EP16-Practicals of Environmental Biology & Biodiversity conservation, Genetic Engineering, Genetics and Crop improvement	<p>Study of the isolation of DNA</p> <p>Study of chemical and use of major pesticides, weedicides, fungicides</p> <p>Physical and chemical analysis of soil and water</p> <p>Soil pH analysis of soil using pH meter</p>	PO4

B.Sc Chemistry

Programme specific outcome

- To understand the basic facts and concepts in chemistry.
- To apply the principles of chemistry.
- To appreciate the achievements in chemistry and to know the role of chemistry in nature and in society.
- To familiarise with the emerging areas of chemistry and their applications in various spheres of chemical sciences and to apprise the students of its relevance in future studies.
- To develop skills in the proper handling of instruments and chemicals.
- To familiarize with the different processes used in industries and their applications.
- To develop an eco-friendly attitude by creating a sense of environmental awareness.
- To be conversant with the applications of chemistry in day-to-day life.

Course outcome

Semester 1

CHE1B01: Theoretical and Inorganic Chemistry-I

1. To apply the methods of a research project
2. To understand the principles behind volumetry
3. To analyse the characteristics of different elements
4. To distinguish between different acid base concepts
5. To analyse the stability of different nuclei

Semester 2

CHE2B02: Theoretical and Inorganic Chemistry-II

1. To understand the importance and the impact of quantum revolution in science
2. To understand and apply the concept that the wave functions of hydrogen atom are nothing but atomic orbitals
3. To understand that chemical bonding is the mixing of wave functions of the two combining atoms
4. To understand the concept of hybridization as linear combination of orbitals of the same atom
5. To inculcate an atomic/or molecular level philosophy in the mind

Semester 3

CHE3B03: Physical Chemistry-I

1. To understand the properties of gaseous state and how it links to thermodynamic systems

2. To understand the concepts of thermodynamics and its relation to statistical thermodynamics
3. To apply symmetry operations to categorise different molecules

Semester 4

CHE4B04 Organic chemistry 1

1. To apply the concepts of stereochemistry to different compounds
2. To understand the basic concepts of reaction mechanism
3. To analyse the mechanism of a chemical reaction
4. To analyse the stability of different aromatic systems.

CHE4B05 Inorganic chemistry practical -1

1. To enable the students to develop skills in qualitative analysis and preparing inorganic complexes
2. To understand the principles behind quantitative analysis
3. To apply appropriate techniques of volumetric quantitative analysis in estimations
4. To analyse the strength of different solutions.

Semester 5

CHE5B06 INORGANIC CHEMISTRY III

1. To understand the principles behind qualitative and quantitative analysis.
2. To understand basic processes of metallurgy and to analyse the merits of different alloys
3. To understand the applications of different inorganic polymers.
4. To analyse different polluting agents
5. To apply principles of solid waste management.

CHE5B07 ORGANIC CHEMISTRY II

1. To understand the difference between alcohols and phenols
2. To understand the importance of ethers and epoxides.
3. To apply organometallic reagents for the interconversion of aldehydes, carboxylic acids and acid derivatives.
4. To apply different reagents for the inter conversion of aldehydes, carboxylic acids and acid derivatives.
5. To apply active methylene compounds in organic preparations.

CHE5B08 Physical Chemistry II

1. To apply the concept of kinetics, catalysis and photochemistry to various chemical and physical processes.
2. To characterise different molecules using spectral methods.
3. To understand various phase transitions and its applications.

Semester 6

CHE6B09 INORGANIC CHEMISTRY IV

1. To understand the principles behind different instrumental methods.
2. To distinguish between lanthanides and actinides.
3. To appreciate the importance of CFT.
4. To understand the importance of metals in living systems.

5. To distinguish geometries of coordination compounds.

CHE6B10 ORGANIC CHEMISTRY III

1. To elucidate the structure of simple organic compounds using spectral techniques.
2. To understand the basic structure and tests for carbohydrates.
3. To understand the basic components and importance of DNA.
4. To understand the basic structure and applications of alkaloids and terpenes.
5. To distinguish different pericyclic reactions.

CHE6B11 Physical Chemistry III

1. To understand basic concepts of electrochemistry
2. To understand the importance of colligative properties
3. To relate the properties of materials/ solids to the geometrical properties and chemical compositions.

CHE6B12 Advanced and applied Chemistry

1. To understand the importance of nanomaterials
2. To appreciate the importance of green approach in chemistry
3. To understand the uses and importance of computational calculations in molecular design
4. To understand the role of chemistry in human happiness index and life expectancy

CHE6B13(E2) POLYMER CHEMISTRY

1. To understand various classification of polymers and types of polymerisation methods
2. To understand the important characteristics of polymers such as average molecular weight, glass transition temperature, viscoelasticity and degradation.
3. To appreciate the importance of processing techniques
4. To characterise different commercial polymers and to understand the significance of recycling.

CHE6B14 (P) PHYSICAL CHEMISTRY PRACTICAL

1. To enable the students to develop analytical skills in determining the physical properties
2. To develop skill in setting up an experimental method to determine the physical properties
3. To understand the principles of refractory, Potentiometry and conductometry

CHE6B15 ORGANIC CHEMISTRY PRACTICAL

1. To enable the students to develop analytical skills in organic qualitative analysis
2. To develop talent in organic preparations to ensure maximum yield

3. To apply the concept of melting or boiling points to check the purity of compounds
4. To analyse and characterize simple organic functional groups
5. To analyse individual aminoacids from a mixture using chromatography.

CHE6B16(P) INORGANIC CHEMISTRY PRACTICAL-II

1. To enable the students to develop analytical skills in inorganic quantitative analysis
2. To understand the principles behind gravimetry and to apply it in quantitative analysis
3. To understand the principles behind colorimetry and to apply it in quantitative analysis

CHE6B17(P) INORGANIC CHEMISTRY PRACTICAL III

1. To enable the students to develop skills in inorganic qualitative analysis.
2. To understand the principles behind inorganic mixture analysis and to apply it in qualitative analysis
3. To analyse systematically mixtures containing two cations and two anions.

CHE6B18 PROJECT WORK

1. To understand the scientific methods of research project
2. To apply the scientific method in life situations
3. To analyse scientific problems systematically.

Semester V

CHE5D01 Environmental Chemistry

At the end of the course, students will be able to:

1. Recall the technical/scientific terms involved in pollution
2. Understand the causes and effects of air pollution
3. Understand the sources, types and effects of water pollution
4. Describe water quality parameters
5. Know soil, noise, thermal and radioactive pollutions and their effects
6. Study various pollution control measures
7. Understand the basics of green chemistry

Complementary Chemistry

Semester 1

CHE1C01 General chemistry

1. To understand and to apply the theories of quantitative and qualitative analysis
2. To understand the theories of chemical bonding
3. To appreciate the uses of radioactive isotopes
4. To understand the importance of metals in biological systems

Semester II

CHE2C02 Physical Chemistry

1. To understand the importance of free energy in defining spontaneity
2. To realise the theories of different states of matter and their implication
3. To understand the basic principles of electrochemistry

Semester III

CHE3C03 Organic Chemistry

1. To understand the basic concepts involved in reaction intermediates
2. To realise the importance of optical activity and chirality
3. To appreciate the importance of functional groups and aromatic stability
4. To understand the basic structure and importance of carbohydrates, nucleic acids, alkaloids and terpenes

Semester IV

CHE4C04 Physical and Applied Chemistry

1. To understand the basic concepts behind colloidal state and nanochemistry
2. To understand the importance of green chemistry and pollution prevention
3. To appreciate the importance of different separation methods and spectral techniques
4. To understand the extent of chemistry in daily life

CHE4C05(P) CHEMISTRY PRACTICAL

1. To understand the basic concepts of intergroup separation
2. To enable the students to develop analytical and preparation skills

2.6.1 Describe Student Performance and Learning Outcome (60)

Teachers and students are aware of the stated Programme and course outcomes of the Programmes offered by the institution.

Describe Course Outcomes (COs) for all courses and mechanism of communication within a minimum of 500 characters and maximum of 500 words

1. Programme outcome:

1. This program could provide Industries, Banking Sectors, Insurance Companies, Financing companies, Transport Agencies, Warehousing etc., well trained professionals to meet the requirements.
2. After completing graduation, students can get skills regarding various aspects like Marketing Manager, Selling Manager, over all Administration abilities of the Company.
3. Capability of the students to make decisions at personal & professional level will increase after completion of this course.
4. Students can independently start up their own Business.
5. Students can get thorough knowledge of finance and commerce.
6. The knowledge of different specializations in Accounting, costing, banking and finance with the practical exposure helps the students to stand in organization.

2. Programme Specific Outcomes (PSOs)

PSOs	B.Com Finance Programme Specific Outcomes
PSO1	The students can get the knowledge, skills and attitudes during the end of the B.com degree course.
PSO2	By goodness of the preparation they can turn into a Manager, Accountant , Management Accountant, cost Accountant, Bank Manager, Auditor, Company Secretary, Teacher, Professor, Stock Agents, Government employments and so on.,
PSO3	Students will prove themselves in different professional exams like C.A. , C S, CMA, MPSC, UPSC. As well as other coerces.
PSO4	The students will acquire the knowledge, skill in different areas of communication, decision making, innovations and problem solving in day to day business activities.
PSO5	Students will gain thorough systematic and subject skills within various disciplines of finance, auditing and taxation, accounting, management, communication, computer.
PSO6	Students can also get the practical skills to work as accountant, audit assistant, tax consultant, and computer operator. As well as other financial supporting services.
PSO7	Students will learn relevant Advanced accounting career skills, applying both quantitative and qualitative knowledge to their future careers in business.
PSO8	Students will be able to do their higher education and can make research in the field of finance and commerce.

COURSE OUTCOMES

Name of the Course	Course code	Course outcomes	PSO addressed
BUSINESS MANAGEMENT	BCM1B01	To understand various business principles and management concepts for a better business practice.	PSO1
MANAGERIAL ECONOMICS	BCM1C01	This is to deals with the application of the economic concepts, theories, tools and methodologies to solve practical problems in a business.	
FINANCIAL ACCOUNTING	BCM2B02	To study the preparation of financial statements, its analysis and reporting (using International Financial Reporting Standards) related to a business.	PSO2
MARKETING MANAGEMENT	BCM2C02	It helps to know about the practical application of marketing orientation, techniques and methods in business enterprises.	
BASIC NUMERICAL METHOD	BCM3A11	To learn the basic mathematical skills for understand and analyze numerical information and to make right conclusions.	PSO4 & PSO3
PROFESSIONAL BUSINESS SKILLS	BCM3A12	To understand the advanced professional skills such as leadership, presentation, strategic thinking, and project management.	
BUSINESS REGULATIONS	BCM3B03	Understand the various laws, rules and regulations (described in IPC- Indian Penal Code)	

<p>CORPORATE ACCOUNTING</p> <p>HUMAN RESOURCE MANAGEMENT</p>	<p>BCM3B04</p> <p>BCM3C03</p>	<p>relating to business contracts and other activities of normal life.</p> <p>Understand the accounting for companies, preparation of their final accounts, and analysis and interpretation of companies' financial results.</p> <p>Understand how a firm can effectively manage their human resource focusing on policies and systems.</p>	
<p>ENTREPRENEURSHIP DEVELOPMENT</p> <p>BANKING AND INSURANCE</p> <p>COST ACCOUNTING</p> <p>CORPORATE REGULATIONS</p> <p>QUANTITATIVE TECHNIQUES FOR BUSINESS</p>	<p>BCM4A13</p> <p>BCM4A14</p> <p>BCM4B05</p> <p>BCM4B06</p> <p>BCM4C04</p>	<p>Develop entrepreneur skills and knowledge among students and thereby increase the number of interested entrepreneurs.</p> <p>Attain knowledge about the principles, concepts, functions and other aspects relating to banking and insurance.</p> <p>Creation of cost consciousness among students.</p> <p>Familiarize students with corporate law and create awareness about the importance of corporate governance in the management of organization.</p> <p>Familiarize students about application of quantitative techniques in managerial decisions.</p>	<p>PSO2, PSO4 & PSO7</p>
<p>ACCOUNTING FOR MANAGEMENT</p>	<p>BCM5B07</p>	<p>Create an understanding about the use of accounting and costing data for planning</p>	<p>PSO4, PSO6 & PSO8</p>

BUSINESS RESEARCH METHODS	BCM5B08	controlling and decision making. Acquire basic knowledge in business research method and develop basic skills to conduct survey researches and case study.	
INCOME TAX LAW AND ACCOUNTS	BCM5B09	Impart basic knowledge and equip students with application of principles and provisions of Income Tax Act 1961.	
FINANCIAL MARKETS AND SERVICES	BCM5B10	Create basic knowledge about structure, organization and working of financial system in India.	
FUNDAMENTALS OF INVESTMENT	BCM5B11	Familiarize the students with the world of investments and to provide a theoretical framework for the analysis and valuation of investment.	
OPEN COURSE (BASIC ACCOUNTING)	BCM5D01	Enable the students to acquire knowledge of accounting principles and practices.	
INCOME TAX AND GST	BCM6B12	Impart basic knowledge and equip students with application of principles and provisions of Income Tax Act 1961 and GST Act 2016.	PSO5, PSO6 & PSO8
AUDITING AND CORPORATE GOVERNANCE	BCM6B13	Provide knowledge of auditing principles and techniques and to familiarize the students with the understanding of issues and practices of corporate governance in the global and Indian context.	
FINANCIAL DERIVATIVES	BCM6B14	Acquire knowledge about	

<p>FINANCIAL MANAGEMENT</p> <p>THREE WEEKS PROJECTS AND VIVA-VOCE</p>	<p>BCM6B15</p> <p>BCM6B16</p>	<p>financial derivatives and their features and know about various risks associated with derivatives.</p> <p>Familiarize the students with the concepts, tools and practices of financial management and to learn about the decisions and processes of financial management in a business firm.</p>	
<p>BUSINESS ENVIRONMENT</p> <p>QUANTITATIVE TECHNIQUES FOR BUSINESS DECISIONS</p> <p>ACCOUNTING FOR MANAGERIAL DECISIONS</p> <p>IT APPLICATIONS IN COMMERCE</p>	<p>MC1C1</p> <p>MC1C2</p> <p>MC1C3</p> <p>MC1C4</p>	<p>Familiarize the students with the concepts of macro economics in which a business organization operates and give an idea about the policies of the government and assess their impact on business.</p> <p>Acquaint students with important quantitative techniques, which enable sound business decision making and make students learn the process of applying appropriate quantitative technique for validating, findings and interpreting results.</p> <p>Enable the students to know the applications of accounting tools, techniques and concepts in managerial decision making process.</p> <p>Get an overall idea about various IT applications used in the business platform especially MIS.</p>	<p>PSO2 & PSO4</p>

ORGANISATIONAL THEORY AND BEHAVIOUR	MC1C5	Understand group behavior in organizations including communication, leadership, power and politics, conflicts and negotiations.	
INTERNATIONAL BUSINESS	MC2C6	Acquaint the students with various concepts of foreign trade and international business.	PSO2 & PSO4
ADVANCED CORPORATE ACCOUNTING	MC2C7	Enable the students to gain the ability to solve the problems relating to holding company, accounts, liquidation of companies and various other accounts.	
BUSINESS COMMUNICATION	MC2C8	Acquire required skills to manage business communication and to give awareness about and to help develop the personality of the students.	
MANAGEMENT SCIENCE	MC2C9	Familiarize students with concepts of management science and tools supporting decision making.	
STRATEGIC MANAGEMENT S AND CORPORATE GOVERNANCE	MC2C10	Provides better idea of how to allocate resources to align with goals.	
FINANCIAL MARKETS AND INSTITUTIONS	MC3C11	Provide the students a sound information and knowledge of broad framework of financial markets and institutions and to understanding of issues and practices of corporate governance in the global and Indian context.	PSO2, PSO5 & PSO8
	MC3C12		

INCOME TAX: LAW AND PRACTICE		Enable students to understand computation of taxable income of various entities and procedure of assessment.	
RESEARCH METHODOLOGY	MC3C13	Enable students to identify research problems, collect and analyze data and present results.	
FINANCIAL MANAGEMENT	MC3E(F)01	Acquaint the students with the basic analytical techniques and methods of financial management of business organizations.	
SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT	MC3E(F)02	Establish a conceptual framework for the study of security analysis and portfolio management.	
FINANCIAL DERIVATIVES AND RISK MANAGEMENT	MC4C14	Make the students efficient in the area of derivatives by giving them the knowledge of basics in options futures swaps etc.	PSO5, PSO6 & PSO8
COST MANAGEMENT	MC4C15	Provide students the adequate knowledge of modern cost management techniques and to enable them apply these techniques for managing a profitable and competitive enterprises.	
STRATEGIC FINANCIAL MANAGEMENT	MC4E(F)03	Build an understanding among students about the concepts, vital tools and techniques used for	

TAX PLANNING AND MANAGEMENT	MC4E(F)04	<p>financial decision making by a business firm.</p> <p>Acquaint the students with theoretical and practical knowledge of tax planning and management techniques.</p>	
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Mechanism of Communication :

College website, College Campus notice board, Departmental Notice boards, Induction Programme, General and Class PTAs , Class room Teaching learning process, Lab experiments, Field studies, study tours, Educational Programmes in the Campus etc.

MODULE WISE COURSE OUTCOMES

UNDER GRADUATE			
SUBJECTS	MODULE	OUTCOMES	PSO ADDRESSED
Business Management	Module 1	Understand the process of business management and its functions.	PSO1
	Module 2	Create knowledge about various leadership, motivation & communication skills.	
	Module 3	Understand the important of ethics in business.	
	Module 4	Acquire knowledge and capability to develop ethical practices for effective management in relation to Corporate Social Responsibility.	
	Module 5	Familiarize the students with emerging concepts in management.	
Managerial Economics	Module 1	Acquaint students with the basic economic tools in managerial economics.	PSO1
	Module 2	Understand the	

	<p>Module 3</p> <p>Module 4</p> <p>Module 5</p>	<p>theory of consumer behavior and various approaches.</p> <p>Familiarize students with various market structures - perfect competition, monopoly, monopolistic competition, and oligopoly.</p> <p>Familiarize students with overview of Indian economy and role of government in market economy.</p> <p>Acquaint students with the structure and direction of India's foreign trade and trade regulations.</p>	
Financial Accounting	<p>Module 1</p> <p>Module 2</p> <p>Module 3</p> <p>Module 4</p>	<p>Familiarize the students with single entry system of accounting.</p> <p>Provide knowledge about company accounts for issue of shares.</p> <p>Provide knowledge about company accounts for issue of debentures.</p> <p>Equip the students with convergence to International</p>	PSO2

	Module 5	<p>Financial Reporting Standards.</p> <p>Enable the students to acquire knowledge about IFRS related financial statements of companies.</p>	
Marketing Management	Module 1	Provide basic knowledge about the concepts, principles, tools & techniques of marketing.	PSO2
	Module 2	Enable the students to acquire knowledge about product management.	
	Module 3	Familiarize students with various distribution channels.	
	Module 4	Equip the students with various integrated marketing communication skills.	
	Module 5	Expose the students to the latest trends in marketing.	
Basic Numerical Methods	Module 1	Enable the students to acquire knowledge about numerical expressions & equations.	PSO4
	Module 2	Enable the students	

	Module 3	to acquire knowledge about matrices. Enable the students to acquire knowledge about sequence, series & progression.	
	Module 4	Enable the students to acquire knowledge about interest & time value.	
	Module 5	Enable the students to acquire knowledge about descriptive statistics.	
Professional Business Skills	Module 1	Provide knowledge about professionalism in business.	PSO3
	Module 2	Familiarize students with various E-Learning opportunities.	
	Module 3	Equip the students with business data analysis.	
	Module 4	Enable the students with the knowledge about Socio-Cyber Informatics.	
	Module 5	Familiarize the students with Digital Marketing.	
Business	Module 1	Provide knowledge	PSO4

Regulations	Module 2	about various business laws. Provide knowledge about various special contracts such as contract of indemnity, guarantee, bailment, and agency and so on.	
Corporate Accounting	Module 3	Acquaint the students with Sale of Goods Act 1930.	PSO
	Module 4	Acquaint the students with The Consumer Protection Act 1986.	
	Module 5	Acquaint the students with The Limited Liability Partnership Act 2008.	
	Module 1	Acquire knowledge about redemption of preference shares & debentures, bonus shares, buy back of shares.	
	Module 2	Familiarize students with financial statements of Banking Companies.	
	Module 3	Familiarize students with accounts of Life Insurance.	

	Module 4	Provide knowledge about preparation of consolidated financial statements of Group Companies.	
	Module 5	Acquire knowledge about important disclosure based accounting standards.	
Human Resources Management	Module 1	Familiarize the students with the different aspects of managing human resources in an organization.	PSO3
	Module 2	Provide knowledge about human resource planning, recruitment & selection.	
	Module 3	Acquire knowledge about placement, induction & internal mobility of human resources.	
	Module 4	Provide idea about importance of performance appraisal & career planning.	
	Module 5	Enable students with provide knowledge about compensation management & grievance redressal.	
Entrepreneurship	Module 1	Familiarize students	PSO3

Development	<p>Module 2</p> <p>Module 3</p> <p>Module 4</p> <p>Module 5</p>	<p>with the concepts of entrepreneurship.</p> <p>Develop knowledge about institutional support & incentives to entrepreneurs.</p> <p>Expose the students with the idea of Micro, Small & Medium Enterprises.</p> <p>Familiarize students with the procedure of setting up of industrial unit.</p> <p>Equip the students for prepare project report.</p>	
Banking & Insurance	<p>Module 1</p> <p>Module 2</p> <p>Module 3</p> <p>Module 4</p> <p>Module 5</p>	<p>Enable the students to acquire basics of banking.</p> <p>Provide knowledge about various negotiable instruments.</p> <p>Familiarize the students with the modern trends in banking.</p> <p>Enable the students to acquire basics of insurance companies and its functions.</p> <p>Acquire knowledge about life insurance</p>	PSO2

		& regulations of insurance business.	
Cost Accounting	Module 1	Expose the students with the importance of cost accounting.	PSO2
	Module 2	Familiarize students with the various techniques of material cost control.	
	Module 3	Familiarize students with the methods of labour and overhead cost control.	
	Module 4	Equip the students with various costing methods such as job costing, contract costing, unit costing, process costing, service costing, etc.	
	Module 5	Acquaint the students with the knowledge of application of various cost control techniques.	
Corporate Regulations	Module 1	Provide awareness about Companies Act 2013.	PSO2
	Module 2	Familiarize the students with the procedure of formation of companies.	
	Module 3	Enable the students with the knowledge	

	<p>Module 4</p> <p>Module 5</p>	<p>about various transactions in relation to share capital of a company.</p> <p>Provide knowledge about management of companies & corporate governance.</p> <p>Acquire knowledge about various companies' meeting; it's conducting winding up procedure.</p>	
Quantitative Techniques for Business	<p>Module 1</p> <p>Module 2</p> <p>Module 3</p> <p>Module 4</p> <p>Module 5</p>	<p>Familiarize students with the use of quantitative techniques in managerial decisions.</p> <p>Acquire knowledge about correlation and regression analysis.</p> <p>Acquaint students with the knowledge of set theory, Venn diagrams & probability.</p> <p>Enable the students with knowledge of application of various theoretical distributions.</p> <p>Provide knowledge</p>	PSO7

		about quantitative approach to decision making.	
Accounting for Management	Module 1	Enable the students to understand the concepts and relevance of Management Accounting.	PSO6
	Module 2	Provide knowledge regarding analysis and interpretation of financial statements based on various methods.	
	Module 3	Familiarize students with the knowledge of ratio analysis for financial statement analysis.	
	Module 4	Acquire knowledge about fund flow and cash flow analysis.	
	Module 5	Equip the students with the knowledge of managerial decision making with the help of CVP Analysis.	
Business Research Methods	Module 1	Enable the students for acquiring basic knowledge in business research methods.	PSO8
	Module 2	Provide awareness about research design and various types of research	

	Module 3	design. Acquire knowledge about various data collection methods.	
	Module 4	Provide knowledge about data processing and its process.	
	Module 5	Familiarize students with research report preparation.	
Income Tax Law & Accounts	Module 1	Provide awareness about basic concepts, principles & provisions of Income Tax Act, 1961.	PSO6
	Module 2	Equip the students to compute income under the head salary.	
	Module 3	Equip the students to compute income under the head house property.	
	Module 4	Equip the students to compute income under the head business or profession.	
	Module 5	Equip the students to compute income under the head capital gains.	
Financial Markets & Services	Module 1	Provide basic knowledge about the	PSO4

	<p>Module 2</p> <p>Module 3</p> <p>Module 4</p> <p>Module 5</p>	<p>significance and functions of financial system.</p> <p>Acquire knowledge about money market and its operations.</p> <p>Acquire knowledge about capital market and its functioning.</p> <p>Familiarize students with the awareness about various financial institutions.</p> <p>Provide awareness about different Regulatory Institutions.</p>	
Fundamentals of Investments	<p>Module 1</p> <p>Module 2</p> <p>Module 3</p> <p>Module 4</p>	<p>Familiarize students with the concepts, objectives and practices of financial management.</p> <p>Equip the students to take various investment decisions.</p> <p>Provide awareness about various finance decisions.</p> <p>Enable the students with the knowledge of dividend decision.</p>	PSO4

	Module 5	Acquire knowledge about Working Capital Management.	
Income Tax and GST	Module 1	Studying about set off and carry forward of losses	PSO6
	Module 2	Provide knowledge about filing of returns of income	
	Module 3	An insight into Goods and Services Tax	
	Module 4	Studying about the registration procedures	
	Module 5	Learn about payment of tax , penalties etc	
Auditing and Corporate Governance	Module 1	Provide knowledge regarding auditing, its object and its principles	PSO5
	Module 2	Understand the audit procedures , valuation of assets and liabilities, vouching etc	
	Module 3	Learn internal control and internal check system	
	Module 4	Familiarize Importance of corporate governance	
	Module 5	Study about major	

		corporate governance failures	
Financial Derivatives	Module 1	Understand the meaning and types of Derivatives	PSO5
	Module 2	Learning the difference between cash market and derivatives market	
	Module 3	Studying in detail what are forwards and futures	
	Module 4	An insight into options contract	
	Module 5	Learning about what are swaps	
Financial Management	Module 1	Familiarizing with the term Financial management	PSO5
	Module 2	Studying about capital budgeting techniques	
	Module 3	Give an insight into what is cost of capital and the sources of finance	
	Module 4	To learn about the dividend decision and its relevance	
	Module 5	Study about the term working capital and its management	
POST GRADUATE			
Business Environment	Module 1	Provide general awareness about business environment.	PSO2

	Module 2	Understand economic systems, planning and public private partnership in Indian economy.	
	Module 3	Familiarize the characteristics, policies and reforms of Indian economy.	
	Module 4	Study forms and policies of foreign direct investment and institutional investment.	
	Module 5	Understand barriers to trade and recent foreign trade policies.	
Quantitative Techniques for Business Decisions	Module 1	Provide a general idea about various quantitative techniques.	PSO4
	Module 2	Understand the concepts of parametric tests and its application.	
	Module 3	Familiarize the assumptions, features, advantages and application of non-parametric tests.	
	Module 4	Study the various applications of statistical quality control.	

	Module 5	Establish awareness about types and application of correlation and regression.	
Accounting for Managerial Decisions	Module 1	Understand the basic elements of management accounting.	PSO2
	Module 2	Familiarize the methods and approaches of capital investment process.	
	Module 3	Study the various applications of CVP analysis and decision making.	
	Module 4	Understand the concepts and elements of cost of capital	
	Module 5	Familiarize the objectives and methods of performance measurement	
IT Applications in Commerce	Module 1	Provide general awareness about IT Applications in Commerce.	PSO4 & PSO2
	Module 2	Familiarize different subsystems of information system.	
	Module 3	Understand the spreadsheet based	

	Module 4	applications for business. Made a practical knowledge about database management technology.	
	Module 5	Provide an overall idea about enterprise resource planning.	
Organizational Theory and Behavior	Module 1	Provide the basic knowledge about organizational behavior.	PSO4
	Module 2	Made an idea about basic psychological process.	
	Module 3	Understand an overall idea about the various theories and issues of personality development.	
	Module 4	Made a general idea about group dynamic and inter group relationships.	
	Module	Familiarize techniques of organizational developments.	
International Business	Module 1	Economic integrations Acquaint the students with various theories of international trade.	PSO2
	Module 2	Understand the	

	<p>Module 3</p> <p>Module 4</p> <p>Module 5</p>	<p>different terms and concepts of international trade analysis.</p> <p>Provide deep knowledge about stages of internationalization and growth of MNCs.</p> <p>Familiarize the international trade agreements related to India.</p> <p>General awareness about international financial institutions and regional.</p>	
Advanced Corporate Accounting	<p>Module 1</p> <p>Module 2</p> <p>Module 3</p> <p>Module 4</p> <p>Module 5</p>	<p>Provide General awareness about International Financial Reporting Standards (IFRS) and other accounting principles.</p> <p>Understand the accounting treatment for group companies.</p> <p>Learn accounting for corporate restructuring and liquidation of companies.</p> <p>Familiarize Importance of voyage accounts and its accounting treatment.</p> <p>Study the basic concepts of Human Resource Accounting</p>	PSO2

		and price level changes.	
Business Communication	Module 1	Understand the meaning, need and methods of business communication.	PSO4
	Module 2	Learn how to prepare various business letters.	
	Module 3	Acquaint skills required to develop non-verbal communication.	
	Module 4	Familiarize self development and communication.	
	Module 5	Understand techniques and concepts of mock interviews.	
Management science	Module 1	Provide basic knowledge about management science.	PSO4
	Module 2	Gave awareness about basic concepts and techniques of linear programming.	
	Module 3	Acquaint required skills to manage the transportation and assignment problems.	
	Module 4	Enabled the procedure of network analysis.	
	Module 5	Understand the process and concepts of queuing theory.	
Strategic management and corporate	Module 1	Provide theoretical knowledge about	PSO2 & PSO4

governance	<p>Module 2</p> <p>Module 3</p> <p>Module 4</p> <p>Module 5</p>	<p>strategic management.</p> <p>Acquaint required skill to manage the environmental analysis.</p> <p>Understand the process and approaches of strategic choice.</p> <p>Familiarized the process of strategic implementation.</p> <p>Acquaint the students with various issues and concepts of corporate governance.</p>	
Financial markets and institutions.	<p>Module 1</p> <p>Module 2</p> <p>Module 3</p> <p>Module 4</p> <p>Module 5</p>	<p>Provided students a sound information knowledge of broad framework of financial markets and institutions.</p> <p>An overview of theories of interest rates.</p> <p>Understand the basic concepts of commodity markets.</p> <p>Provide theoretical knowledge about strategic management.</p> <p>Gave awareness about forms of foreign capital flows.</p>	PSO2
Income tax law and practices.	Module 1	Enabled students to understand computation of taxable income.	PSO5

	Module 2	Understand the procedure of assessment of various entities.	
	Module 3	Gave an idea about computation of book profit assessment of firms, AOP, BOP and co-operative societies.	
	Module 4	Understand powers and functions of income tax authority.	
	Module 5	Familiarize the procedure and filing of income tax returns	
Research Methodology	Module 1	Provide theoretical knowledge about basic concepts of research methodology	PSO8
	Module 2	Understand the theories and techniques of population and sampling.	
	Module 3	Gave an idea about data collection methods	
	Module 4	Provide deep knowledge about measurement and scaling of research	
	Module 5	Acquaint required skill to manage the data processing and presentation.	
Financial Management	Module 1	Understand the foundation of finance	PSO5

	Module 2	Gave an idea about meaning, concept and cycle of working capital management strategy.	
	Module 3	Provide deep knowledge about cost of capital.	
	Module 4	Familiarize the concepts of operating, financial and combined leverage analysis.	
	Module 5	Understand the mechanics and practices of dividend payment.	
Security analysis and portfolio management	Module 1	Provide theoretical knowledge about investment decision.	PSO5
	Module 2	Understand the various concepts and types of bond investment analysis.	
	Module 3	Familiarize the methods and approaches of equity analysis.	
	Module 4	Gave an idea about Portfolio analysis and its selections.	
	Module 5	Acquaint required skill to manage the portfolio management.	
Financial derivatives and risk management	Module 1	Enabled students to understand the importance and types of risk management.	PSO5

	Module 2	Understand the procedure of future and forwards trading.	
	Module 3	Gave an idea about meaning, needs and importance of options.	
	Module 4	Understand the factors and risk affecting option pricing.	
	Module 5	Familiarize the meaning and procedure of swaps.	
Cost management	Module 1	Provided students a sound knowledge of cost management.	PSO5 & PSO6
	Module 2	An overview of modern cost management concepts	
	Module 3	Understand the basic concepts of emerging costing approaches.	
	Module 4	Provide knowledge about costing in service sector and process costing.	
	Module 5	Gave awareness about forms of standard costing and variance analysis.	
Strategic financial management	Module 1	Understand the financial goal and strategies of management.	PSO5
	Module 2	Understand the different terms and concepts of financial strategy of capital structure.	

	Module 3	Provide deep knowledge about lease financial strategy.	
	Module 4	Familiarize the theories of merger strategies.	
	Module 5	General awareness about types and procedure of takeover strategy.	
Tax planning and management	Module 1	Enabled students to understand the importance of tax planning.	PSO5 & PSO6
	Module 2	Gave an idea about assessment of companies.	
	Module 3	Understand tax planning with reference to all five heads of income for individuals.	
	Module 4	Familiarize the meaning and procedure of tax planning of managerial decisions.	
	Module 5	Understand the tax planning under various circumstances.	

2.6.1. Programme and course outcomes for all Programmes offered by the Department

Part A

PSO Code	Programme Specific Outcomes (PSO)	
PSO 1	critical thinking	
PSO 2	effective communication	
PSO 3	statistical and mathematical skill	
PSO 4	social interaction	
PSO 5	Econometric applications	
PSO 6	self directed and life long learning	
PSO 7	knowledge of economic system	

Part B

Course Code	Course Outcome	PSO Addressed (Write the PSO Code)
parer 1 (micro economics0	Understand the fundamentals of micro economics	
	demonstrate quatitative reasoning skill	
	be able to use critical thinking skills with in dicipline of economics	
macro economics	to explain the concept of macroeconomics	
	to integrate the role of fiscal and monetary policies in regulating economy	
Indian economy	it makes the learners to understand the economic functioning and conditions of our country in the context of past present and future	
Economics of development	It makes the students to understand the aspects of development process	
International Trade	It enable the students the pattern and nature of international trade and their contribution to economic development.	
Economic thought	Gives idea to the students about the systematic development of economic theories,beginning from pre modern and modern era	
Essentials of economics	Students will be able to understand,links between househole behaviour economic models of demand	

Public economics	it will help in understanding and analysing the impact of public policy on the allocation of resources and distribution of income in the economy and also analysis of public expenditures ,taxation ,budegtery proceduers, stabilisation instruments,debt issues.	
Banking and finance	To give indepth knowldege of banking and finance to the students of economics with practical inputs and prepares them as reponsible customer	
Staisical methods for economics	It helps the students to understand the issues regarding the data collection,processing,organising,and presentation and issues involved therein	
Mathamatica I methods for economics	the student is exposed to economic concepts in mathamatical format through simple illustrations and prepares the ground for more scientific study	
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DEPARTMENT OF HISTORY

Programme Specific Outcomes (PSOs)

PSO Code	Programme Specific Outcomes (PSO)
PSO 1	Understand the present existing social, political, religious and economic conditions of the people
PSO 2	Capacity to explain how and why important events happen
PSO 3	Understanding of the historical method of study
PSO 4	Critical understanding of developments in historiography
PSO 5	Knowledge of the history of the India and 20th Century Modern World
PSO 6	Informed familiarity with multiple cultures and diversity
PSO 7	Awareness of current historical debates

Course Outcomes

Course Code	Course Outcome	PSO Addressed (Write the PSO Code)
HIS1B01 TRENDS IN HISTORIOGRAPHY	CO1. To understand Evolution of History as a discipline. CO2. To impart a knowledge on various Streams of modern historiography. CO3. Learn to Conceptualizing history in different forms	PSO3 & PSO4
HIS2 B02 Trends in Indian Historiography	CO1. To Understand various new trends in the Indian Historiography. CO2. To Analyze knowledge on the Historical consciousness in Pre-British India	PSO2,PSO3&PSO4
HIS3B03 WORLD HISTORY -1	CO1. To analyze culture, origin of human species, origin and growth of civilizations and also about the stages of human development. CO2. To understand multiple spatial and temporal contexts of early civilizations, human nature, cultural awareness, political understanding and society of civilizations	PSO5
HIS3 B04 INDIAN HISTORY-1	CO1. To understand broad historic outline about the process of socio-political formations in the north and south India. CO2. To analyze early cultures and meetings between cultures and similar trends across culture	PSO1,PSO2,PSO5,PSO6 &PSO7
HIS4 B05 WORLD HISTORY- 2	CO1. To create knowledge on medieval world through different state systems, its socio- cultural contributions and its impact on later society	PSO5,PSO6

HIS4B06 INDIAN HISTORY-2	CO1. To explicate the nature of state and society in Medieval India with process of state formation; economic pattern of medieval India along with the social and cultural developments of the period. CO2. explains the process of medieval trade related to Arabian Sea and Indian Ocean.	PSO5,PSO6&PSO7
HIS1(2) C02 - MODERN WORLD HISTORY FROM AD-1500: I	CO1. To Provide basic understanding regarding the major historical situations which contributed to design the socio-political and economic atmosphere of the modern world.	PSO5
HIS4(3) C02 MODERN WORLD HISTORY FROM AD-1500: II	CO1. To understand basics regarding the major historical situations which contributed to design the socio- political and economic atmosphere of the modern and contemporary world.	PSO5
HIS1(2) C03 SOCIAL AND CULTURAL HISTORY OF BRITAIN: I	CO1. To analyze the Social and Cultural History of Britain, from the Early Invasions to the developments of Mercantilism and helps to acquire basic understanding regarding the major historical situations which contributed to design the socio- political and economic atmosphere of the Britain.	PSO1 & PSO6
HIS4(3) C03 SOCIAL AND CULTURAL HISTORY OF BRITAIN: II	CO1. acquire basic understanding regarding the major historical situations and the major thinkers who contributed to enrich the historical situations which contributed to design the socio-political and economic atmosphere of the Colonial and Post- colonial Britain.	PSO1&PSO6
HIS5B07 KERALA SOCIETY AND CULTURE: ANCIENT AND MEDIEVAL	CO1. Identify Geographical features of Kerala CO2. analyse early human settlements –Palaeolithic, Neolithic CO3. describe Polity and society of Perumal Era CO4. classify age of naduvazhis and Highlights advent of Europeans	PSO2,PSO6
HIS5B08 HISTORY OF MEDIEVAL INDIA	CO1. Understanding of Delhi Sultanate, Mughal rule administrations, art, and architecture and. Identify cultural synthesis. CO4. Analyse Medieval South India	PSO5,PSO6
HIS5B09 HISTORY OF MODERN INDIA	CO1. Evaluate consolidation of English Power in India and Analyse social religious consciousness in India. CO2.	PSO5,PSO6

	Comparison of Nationalist movements- Pre-Gandhian and Post- Gandhian Era	
HIS5B10 HISTORY OF THE MODERN WORLD	CO1. Describe rise of modern world and Classify growth of capitalism. CO2. Classification development of Democracy and Acquire knowledge about 20th century world	PSO5,PSO7
HIS6B11 HISTORY OF MODERN KERALA	CO1. Describe Early Resistance against British East India Company CO2. Classify Scio- religious movement of Kerala CO3. Classification early Political cultural activities of Kerala CO4. Acquire knowledge about Aikya Kerala Movement	PSO2,PSO6,PSO7
HIS6B12 HISTORY OF CONTEMPORARY INDIA	CO1. Understanding of Salient Features of Indian Constitution CO2. Analyse Indian Economy CO3. Identify Challenges within the Nation CO4. Analyse Democratic Culture in India	PSO1,PSO2,PSO6 &PSO7
HIS6B13 CONTEMPORARY KERALA	CO1. Identify Political Experience of Kerala and Analyse Kerala Economy CO2. describe Development model and Discontents and classify Kerala Culture	PSO1,PSO2,PSO6 &PSO7
HIS6B14 GENDER STUDIES	Identify Key Concepts and Terminology of Gender CO2. Describe Gender Studies – the Indian Scenario Co3. describe Gender Studies As a Discipline CO4. classify Indian Societies through Gender Perspective	PSO6,PSO7
HIS6B15 COURSE WORK- DISSERTATION	CO1. Understanding of techniques and methods of presentation in History by the students. CO2. Preparation of preliminary bibliography CO3. Identify Collection of Data CO4. Presentation of findings, drafting the Dissertation	PSO3
HIS5D02 HISTORICAL TOURISM	CO1. Identify the cultural paradigms and heritage. CO2. Analyse various tourist destinations and Tourism in India	PSO6,PSO7
HIS6E01 PRINCIPLES AND METHODS OF ARCHAEOLOGY	CO1. Promote the education of the public in archaeology CO2. Advance and assist archaeological research. CO3. Encourage widespread participation in archaeology throughout society, identifying and addressing barriers to inclusivity	PSO1,PSO2,PSO7

COURSE OUTCOME-BA MALAYALAM

FIRST SEMESTER-

I MAL1B01- MALAYALAKAVITHA NAVODHANAGHATTAM

1. To make the students aware of the style of Malayalam poetry in general
2. Appreciation of poetry
3. Discuss the values in the way of new thoughts

II MAL1C01 KERALAPADANAM POORVAKAALAKERALAM

1. To aware the culture of kerala
2. Make the students to aware of the origin and development of kerala

SECOND SEMESTER -

I MAL2B02 - MALAYALA CHERUKADHASAHITHYAM

1. General awareness of origin and development of Malayalam short stories
2. Enhance students creativity

II MAL2C02 -KERALAPADANAM MADHYAKAALAKERALAM

- 1.complement create a general understanding of the history and culture of kerala
2. to enable students to absorb the literary,and sociocultural ,political histrocial trends and movements underlying the culture of kerala

THIRD SEMESTER

-MAL3B03- MALAYALAKAVITHA UTHARAGHATTAM

1. Identifying the futuristic development in Malayalam poetry
2. Identifying narrative innovations
3. Understand critical writing trends

II. MAL3B04- NADAKAM THIRAKKADHA(CORE)

1. Create awareness about Malayalam drama history
2. The impact of drama has had on the socio political and cultural history of kerala must be realized

III. MAL3C03 KERALAPADANAM ADHINIVESAKAALAKERALAM(COMPLIMENTARY)

- 1.complement create a general understanding of the history and culture of kerala
2. to enable students to absorb the literary,and sociocultural ,political histrocial trends and movements underlying the culture of kerala

FORTH SEMESTER

I -MAL4B05 BHASHASATHRAVUM BHASHACHARITHRAVUM

1. General knowledge of theories of modern linqustics
2. Get Familiar With The Concepts Of Modern Linguistics

II. MALA4B06- NOVEL SAAHITHYAM

1. Provide general awareness of the novel literature
2. Understanding the different stage of growth for Malayalam novel literature

III. MAL4C04-KERALAPADANAM AADHUNIKAKERALAM(COMPLIMENTARY)

- 1.complement create a general understanding of the history and culture of kerala
2. to enable students to absorb the literary,and sociocultural ,political histrocial trends and movements underlying the culture of kerala

FIFTH SEMESTER

I.MAL5B07- MALAYA VYKARANAM

1. get the ability to analyze the language and determine the language
2. understand the expressions introduced in Malayalam language

II. MAL5B08-PAASCHATHYA SAAHITHYASIDHADHAM

1. To aware western literary theories
2. Get acquainted with the development effort of western literary theories

II. MAL5B09-MALAYALASAHITHYA VIMARSHANAM

1. Develop a general understanding the scope of Malayalam literacy criticism
2. Introduce evolutionary developments to Malayalam criticism

III. MAL5B010- NADODIVIJANEYAM (CORE PAPER)

1. Gaining knowledge of folk culture through which to gain awareness of identity
2. Back to the different aspect of folklore

IV. MAL5D01- CHALACHITHRA PADANAM

1. Students have a general knowledge of the origin and history of cinema
2. Create students with the ability of learn and analysis forms of film study and film making

SIXTH SEMESTER

I.MAL6B11 MALAYALA KAVITHA POORVAGHATTAM (CORE COURSE)

1. To aware the different forms of ancient literature
2. Knowledge of early manipravala works

II. MAL6B12 -GADHYASAHITHYAM

1. Educate the students on the up to date development of Malayalam prose literature
2. To gain a general knowledge of Malayalam prose and literature

III. MAL6B13 - POWRASTHYASIDHANTHAGAL

1. educate the students on the up to date development of Malayalam prose literature of the Indian aesthetic projects
2. acquire the ability to analysis literary studies while strengthening literary enjoyments

VI. MAL6B14- NAVASAMSKKARAPADANAGAL

1. Generalize on old and new approaches to learning culture
2. cultural studies have an impact on physical as well as the physical

COURSE OUTCOME-MA MALAYALAM

FIRST SEMESTER-

I MAL1C01 AADHYAKAALA MALAYALAGHADHAYAM (CORE)

1. Objectively understand the origins of Malayalam language and its contemporary state
2. We strong in dealing with linguistic issues with a clear vision

II MAL1C02 AADHYAKAALA MALAYALA KAVITHA

1. An objective understanding of the origins and traditions of poetics literature

2. Familiarise yourself with the verse patterns that occurred during the various periods

III MAL1C03 AADHUNIKA KAVITHA

1. Discover new areas of enjoyment through suitable text of poetry
2. Enabling evaluation in new ways of criticism

IV MAL11E1/4 KADHASAAHITHYAM(ELECTIVE)

1. Learn the evaluation and evaluation of Malayalam short stories with critical thinking
2. Learn the tale of the short story, the evaluation and experience

SECOND SEMESTER -

I MAL2C05 AADHUNIKA MALAYA GHADHYAM

1. Explore various samples and its categories for literature in the expansion of prose literature
2. Learn the early forms and modernisation of Malayalam prose

II. MAL2C06 MALAYALA VYAKARANAM

1. Learn about the western grammar tradition and the Indian grammar tradition
2. Get acquainted with grammar works in Malayalam

III. MAL2C07 BHASHA SASTHRAM

1. Identifying the structure of the language and the different levels of structure
2. To analyze linguistics concepts and methodological scheme used in language discourse

IV. MAL2E28 NAVEENA KAVITHA (ELECTIVE)

1. To Understand historical perspective on the changes and experiments in Malayalam poetry. Learn, new sensitivity, rhythmic facial expressions critically

THIRD SEMESTER

I MALC09 SAHITYA SIDHADHAM

1. To aware western literary theories
2. Get acquainted with the development effort of western literary theories

II MALCO10 KERALA SAMSKARAM

1. to enable students to absorb the literary, and sociocultural ,political histrocial trends and movements underlying the culture of kerala
2. to summarize the complete history of Kerala for students

III MAL3E/12 JANAPRIYA SAAHITHYAM

1. aware of popular literature if neglected or talked by critics and critics in Malayalam
2. learn the features of popular literature

FORTH SEMESTER

I MAL4CO13 SAAHITHYA SIDHADHAM

1. the emergence and development of modern literacy forms and movements must be historically analyzed
2. applying theories in practical terms

II MAL4A014 VIVARTHANAM THATHWAVUM PRAYOGHVUM

1. generalize the theoretical and practical conditions for transilation
2. gain the ability to translate from Malayalam to English

III MAL4C4/16 FOLKLORE

1. Gaining knowledge of folk culture through which to gain awareness of identity
2. Identify to the different aspect of folklore

COMMON COURSE BA/BS.c

FRIST SEMESTER

I MAL1A01 MALAYALA SAHITHYAM 1

1. To Understand the changes of Malayalam literature in different periods
2. To understand the writings of Malayalam writers

SECOND SEMESTER

I MAL2A02 MALAYALA SAAHITHYAM 2

1. Understand the stages of growth in Malayalam poetry
2. Formulate common ground on the progression of prose and critical literature

THIRD SEMESTER

I MAL3A03 MALAYALA SAAHITHYAM 3

1. Get acquainted with the tide of drama, screenplay, autobiography
2. To understand general knowledge about film art

FOURTH SEMESTER

I MAL4A04 MALAYALA SAHITHYAM 4

1. Gain the ability to translate from Malayalam and English
2. To understand about novel literature

B.COM COMMON COURSE

FRIST SEMESTER

I MAL1A01 MALAYALA SAHITHYA PADANAM 1

1. Be interested in literature
2. To understand different literary movements

SECOND SEMESTER

I MAL1A02 (1) MALAYALA SAHITHYA PADANAM 2

1. To understand various literary forms of language
2. To understand trends in various periods in the history of Malayalam poetry and literature

BS.C OTHERPATTERN

FRIST SEMESTER

I MAL1A01(2) MALAYALAM- BHASHAYUM SAHITHYAVUM (1)

1. To increase creative communication ability in the study of poetry
2. To understand the relevance and importance of translation

SECOND SEMESTER

I MAL2A02(2) MALAYALAM- BHASHAYUM SAHITHYAVUM (2)

1. General understanding of Malayalam language culture and literature
2. Introduce various literary forms and movements

COURSE OUTCOME- SANSKRIT

COMPLEMENTRY COURSE 1- SANSKRIT (B A MALAYALAM PROGRAMME)

FIRST SEM - SKT 1 C 01 (02) - POETRY, GRAMMAR & TRANSLATION

1. To make the students aware of the style of Sanskrit Kavyas in general.
2. Appreciation of Poetry.
3. Identification of Vibhaktis of words in the verse.
4. To compare the similar contexts from Malayalam Literature.
5. Developing the skill of translating verses from Sanskrit to regional languages.

COMPLEMENTRY COURSE II- SANSKRIT (B A MALAYALAM PROGRAMME)

SECOND SEM-SKT2 C 02 (02) – PROSE, BASIC GRAMMAR & TRANSLATION

1. Make the student aware about the prose literature in Sanskrit.
2. Familiarize the student with the basic principles of Sanskrit Grammar.
3. Critically analyse the similar verses and prose literature from the Malayalam literature.
4. Enable the students to translate Sanskrit passages into Malayalam

COMPLEMENTRY COURSE III- SANSKRIT (B A MALAYALAM PROGRAMME)

THIRD SEM-SKT3 C 03 (02) – KERALA CONTRIBUTION TO SANSKRIT

1. Understand the students the wealth of knowledge preserved in Sanskrit.
2. Critically analyse the contributions of Kerala Sanskrit authors familiar to Malayalam literature.
3. Introducing Branches like Philosophy Literature, Ayurveda, Jyotissatra, Ganitha and Vastuvidya.

COMPLEMENTRY COURSE IV- SANSKRIT (B A MALAYALAM PROGRAMME)

(FOURTH SEM)-SKT4 C 04 (02) – DRAMA AND KERALA SANSKRIT THEATRE

1. Familiarize the dramatic features of Sanskrit theatre to students.
2. Enable the student to know the general characteristic features of Sanskrit drama.
3. Enable the student to know Traditional Performing Arts of Kerala

BA/ B.Sc Programme-COMMON COURSE- SANSKRIT

COMMON COURSE -07- SANSKRIT (FIRST SEM)

SKT1 A 07 (01) – KAVYA LITERATURE AND APPLIED GRAMMAR

- 1.General awareness on Origin and Development of Sanskrit Kavya Literature.
- 2.General awareness of Sanskrit Mahakavya Literature to students.
- 3.Enable the students to enjoy and appreciate Mahakavya.
- 4.Familiarize the student with the basic principles of Sanskrit Grammar
5. **Moral values are inculcated among the students (Module III- Subhashithas)**

COMMON COURSE -08- SANSKRIT (SECOND SEM)

SKT2 A 08 (01) – PROSE LITERATURE AND APPLIED GRAMMAR

1. Make the students aware of the origin and development of Sanskrit Prose Literature and didactic fables.
2. Introducing Panchathantra stories.
3. Make the students to write small passages in Sanskrit of their own.
4. Identifying Samasas Vigrahas and Grammatical Peculiarities.
5. **To inspire students to use their energy and creative ability for the upliftment of the poor and downtrodden among the society. (Module III-Panchathantra Stories)**
6. **Human Values and ethics are Introduced through the Advice given by Sukanasa (Module II- Sukanasopadesa)**

COMMON COURSE -09- SANSKRIT (THIRD SEM)

SKT 3 A 09 (01) – DRAMA AND ALANKARA

- 1.Students understand the Origin and Development of Sanskrit Drama
- 2.To know the General Characteristics of Sanskrit Drama
3. Cultivate the culture of appreciation of Sanskrit Drama among students.
- 4.Make the Students to know the general features of Alankaras.
5. **To make students empathetic towards fellow human being (Module II Drama Madhyamavyayoga)**

COMMON COURSE -10- SANSKRIT (FOURTH SEM)

SKT 4 A 10 (01) – HISTORY OF SANSKRIT LITERATURE , KERALA CULTURE & TRANSLATION

- 1.Familiarize the general features of Ithihasas.
2. Introduction of Major Sanskrit Authors and their works
- 3.General awareness of Classical art forms of Kerala.
- 4.Enable students to translate from Sanskrit to English and vice versa

P G CORE COURSE - SANSKRIT (M A MALAYALAM PROGRAMME)

THIRD SEM - SKT 3 E 10 –BASIC SANSKRIT – I POETRY AND GRAMMAR

1. To make the students aware of the style of Sanskrit Kavyas in general
2. Enable the students to enjoy and appreciate Mahakavya.
- 3.To make them empathetic towards fellow human being.
- 4 Familiarize the student with the basic principles of Sanskrit Grammer.

P G CORE COURSE - SANSKRIT (M A MALAYALAM PROGRAMME)

FOURTH SEM - SKT 4 E 12 –BASIC SANSKRIT – II

- 1.Cultivate the culture of appreciation of Sanskrit Drama among students.
- 2.To know the General Characheristics of ancient Sanskrit Drama
- 3.To broaden the outlook of the students and instill in them a sense of confidence and responsibility.
4. Familiarize the Eastern Criticism

COURSE OUTCOME - HINDI

BA/BSC PROGRAMME

FIRST SEMESTER Common Additional Language course in

Hindi. HIN 1 A07(1) PROSE AND DRAMA

Course Outcome :

- Approach literary texts in terms of genre, gender and the canon
- Understand and use academic conventions: referencing and bibliography.
- exposed to the origin and development of Hindi drama and its various themes and forms of different ages and stages
 - . Helps students explore how writers use the resources language as a creativity to explore the entire range of human experience through dramas as a literary form.

BA/BSC PROGRAMME

SECOND SEMESTER

Common Additional Language Course in Hindi

HIN 2 A08(1) GRAMMER AND TRANSLATION

Course Outcome

- Understand the differences between spoken and written Hindi
- Understand the factors that influence use of grammar and vocabulary in speech and writing
- Understand the different ways in which grammar has been described
- Define the link between translation theory and translation practice.

- Define the effects of translation theories on translation practice.
- Define the contribution of translation practice to translation theory

BA/BSC PROGRAMME

THIRD SEMESTER

Common Additional Language course in Hindi

HIN 3 A09 POETRY IN HINDI

Course Outcome

- Understand the common techniques underlying free verse and traditional forms of poetry
- Identify personal experiences that can be used when writing poems
- Understand the basic terminology and practical elements of poetry.

BA/BSC PROGRAMME

FOURTH SEMESTER

Common Additional Language course in Hindi

HIN 4 A 10 NOVEL AND SHORT STORIES

Course Outcome:

- Enables the students to analyze literature and fiction using appropriate theoretical, historical, and cultural apparatus.
- Students get to know various cultures and construction of gender, nation and race throughout the history.
- The prescribed fiction helps the students to learn human values and the behavioral patterns from great works of art, and develops the ability to understand human race.

BCOM / BBA PROGRAMME

FIRST SEMESTER

Common Additional Language course in Hindi

HIN 1 A 07(2) PROSE FORMS IN HINDI LITERATURE

Course Outcome :

- Approach literary texts in terms of genre, gender and the canon
- Understand and use academic conventions: referencing and bibliography.
- The learner will be aware of socio-political and economic conditions of the society from different periods.

BCOM / BBA PROGRAMME

SECOND SEMESTER

Common Additional Language course in Hindi

HIN 2A 08(2) POETRY, CORRESPONDANCE AND TRANSLATION

Course Outcome

- Understand the common techniques underlying free verse and traditional forms of poetry
- Identify personal experiences that can be used when writing poems
- . Understand the basic terminology and practical elements of poetry
- Define the link between translation theory and translation practice.
- Define the effects of translation theories on translation practice.

- Define the contribution of translation practice to translation theory
- Understand the importance of correspondence

L.R.P PROGRAMME (BSC COMPUTER SCIENCE, BCA, BMMC, BSC ELECTRONICS etc)
FIRST SEMESTER Common Additional Language course in Hindi
HIN 1A 07(3) PROSE AND ONE ACT PLAYS

Course Outcome :

- Approach literary texts in terms of genre, gender and the canon
- Understand and use academic conventions: referencing and bibliography.
- The learner will be aware of socio-political and economic conditions of the society from different periods
- Be familiar with the theoretical foundations of the genre;
- Be able to compare and contrast the genre with other dramatic forms

L.R.PROGRAMME (BSC COMPUTER SCIENCE, BCA, BMMC, BSC ELECTRONICS ETC .)
SECOND SEMESTER
Common Additional Language course in Hindi
HIN2A08(3) POETRY AND SHORT STORIES

Course Outcome

- Understand the common techniques underlying free verse and traditional forms of poetry
- Identify personal experiences that can be used when

writing poems

- Understand the basic terminology and practical elements of poetry.
- Students get to know various cultures and construction of gender, nation and race throughout the history
- The prescribed fiction helps the students to learn human values and the behavioral patterns from great works of art, and develops the ability to understand human race.

2.6.1 Describe Student Performance and Learning Outcome (60)

Teachers and students are aware of the stated Programme and course outcomes of the Programmes offered by the institution.

Describe Course Outcomes (COs) for all courses and mechanism of communication within a minimum of 500 characters and maximum of 500 words

Programme specific outcomes:

PSO's	B. Sc Mathematics Programme Specific Outcomes
PSO1	Present Mathematics clearly and precisely, make vague ideas precise by formulating them in the language of Mathematics, describe Mathematical ideas from multiple perspectives
PSO2	Understand, formulate and use quantitative models arising in social science, business and other context from Mathematical point of view
PSO3	Recognize the geometrical interpretation of Mathematical concepts and analyse the physical world around us.
PSO4	Understand the basic concepts of the core branches of Mathematics such as Real Analysis, Complex Analysis, Algebra and Differential Equations.
PSO5	Formulate and develop Mathematical arguments in a logical manner.
PSO6	Understand the importance of pattern recognition in Mathematics
PSO7	Know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand and master several techniques of problem solving

Course outcomes

Name of the Course	Course code	Course outcomes	PSO addressed
BASIC LOGIC & NUMBER THEORY	MTS1 B01	<ul style="list-style-type: none"> • Prove results involving divisibility, greatest common divisor, least common multiple and a few applications. • Understand the theory and method of solutions of LDE. • Understand the theory of congruence and a few applications. • Solve linear congruent 	PSO5

		<p>equations.</p> <ul style="list-style-type: none"> Learn three classical theorems viz. Wilson's theorem, Fermat's little theorem and Euler's theorem and a few important consequences 	
CALCULUS OF SINGLE VARIABLE-1	MTS2 B02	<ul style="list-style-type: none"> Introduce the fundamental ideas of limit, continuity and differentiability Familiarise some basic theorems of differential calculus. To show how these ideas can be applied in the problem of sketching of curves and in the solution of some optimization problems of interest in real life 	PSO3
CALCULUS OF SINGLE VARIABLE-2	MTS3 B03	<ul style="list-style-type: none"> To introduce the idea of improper integrals, their convergence and evaluation. Understand parametrization of curves, use it to calculate the arc length, curvature, area of surface of revolution Introduce other coordinate systems which often simplify the equation of curves and surfaces and the relationship between various coordinate systems 	PSO3, PSO7
LINEAR ALGEBRA	MTS4 B04	<ul style="list-style-type: none"> Study of linear systems of equations, vector spaces, and linear transformations Understand the relationship among the solutions of a given system of linear equations and some important subspaces associated with the coefficient matrix of the system. 	PSO2, PSO1

		<ul style="list-style-type: none"> • Discuss particularly some basic matrix transformations in the vector spaces \mathbb{R}^2 and \mathbb{R}^3, having interest in the field of computer graphics, engineering and physics, specially pinpointing to their geometric effect 	
THEORY OF EQUATIONS AND ABSTRACT ALGEBRA	MTS5 B05	<ul style="list-style-type: none"> • Find out the relationship between the roots and coefficients of an nth degree polynomial and an upper and lower limit for the roots of such a polynomial. • To locate the region of solutions for a general polynomial equations • To explore the idea of structural similarity, the notion of cyclic group, permutation group, various examples and very fundamental results 	PSO6, PSO4
BASIC ANALYSIS	MTS5 B06	<ul style="list-style-type: none"> • To learn and deduce rigorously many properties of real number and thus help to appreciate the beauty of logical arguments and embolden them to apply it in similar and unknown problems. • To get a rigorous introduction to algebraic, geometric and topological structures of real & complex number system • Rich use of geometry, comparison between real and complex calculus- areas where they agree and where they differ, the study of mapping properties of a few important complex 	PSO1, PSO4

		functions exploring the underlying geometry.	
NUMERICAL ANALYSIS	MTS5 B07	<ul style="list-style-type: none"> • Understand several methods to find out the approximate numerical solutions of algebraic and transcendental equations with desired accuracy. • Understand the concept of interpolation and also learn some well-known interpolation techniques. • Understand a few techniques for numerical differentiation and integration and also realize their merits and demerits. • Find out numerical approximations to solutions of initial value problems and also to understand the efficiency of various methods. 	PSO7
LINEAR PROGRAMMING	MTS5 B08	<ul style="list-style-type: none"> • To solve linear programming problems geometrically • To understand the drawbacks of geometric methods • Solve Linear Programming problems more effectively using Simplex algorithm • Convert certain related problems, not directly solvable by simplex method, into a form that can be attacked by simplex method • Understand duality theory, a theory that establishes relationships between linear programming problems of maximization and minimization • Understand game theory & solve transportation and 	PSO1, PSO2

		assignment problems by algorithms that take advantage of the simpler nature of these problems	
INTRODUCTION TO GEOMETRY	MTS5 B09	<ul style="list-style-type: none"> • Recognise and classify conics. • Understand Kleinian view of Euclidean geometry. • Understand affine transformations, the inherent group structure, the idea of parallel projections and the basic properties of parallel projections • Understand the idea of homogeneous coordinate of a point in projective plane. • Appreciate the advantage of interpreting a Euclidean theorem as a projective theorem by learning Desargues and Pappu's theorem. • Find an application of cross ratio in the context of aerial photography 	PSO2, PSO3
MATHEMATICS FOR DECISION MAKING	MTS5 D04	<ul style="list-style-type: none"> • Create, select and apply appropriate techniques, resources and modern technology in multidisciplinary environment 	PSO5, PSO7
REAL ANALYSIS	MTS6 B10	<ul style="list-style-type: none"> • Understand several deep and fundamental results of continuous functions on intervals and integration theory. • Learn and find out examples/counter examples to prove or disprove the validity of several mathematical statements that arise 	PSO5

		<p>naturally in the process/context of learning</p> <ul style="list-style-type: none"> • Learn the properties of and relationship among two important improper integrals namely beta and gamma functions that frequently appear in mathematics, statistics, science and engineering 	
COMPLEX ANALYSIS	MTS6 B11	<ul style="list-style-type: none"> • Understand the difference between differentiability and analyticity of a complex function and construct examples. • Study analytic functions and their basic behavior with respect to the theory of complex calculus. 	PSO4
CALCULUS OF MULTI VARIABLE	MTS6 B12	<ul style="list-style-type: none"> • Address the practical problem of evaluation of double and triple integrals, useful in several areas of science and technology as many functions that arise in real life situations are functions of multivariable • Find a few real life applications of Lagrange multiplier method in optimization problems. • Understand several contexts of appearance of multivariable functions and their representation using graph and contour diagrams. 	PSO1, PSO3
DIFFERENTIAL EQUATIONS	MTS6 B13	<ul style="list-style-type: none"> • Identify a number of areas where the modelling process results in a differential equation • Be familiar with the theory and method of solving linear homogeneous and nonhomogeneous equations 	PSO2, PSO7

		<ul style="list-style-type: none"> • Find out ways and means for solving differential equations that has wide range of applications in Physics, Chemistry, Biology, Medicine, Economics and Engineering 	
GRAPH THEORY	MTS6 B14 (E01)	<ul style="list-style-type: none"> • Discuss some of the major results of Graph Theory and to provide an introduction to the language, methods and terminology of the subject • Emphasize various approaches (algorithmic, probabilistic, etc.) that have proved fruitful in modern graph theory • Learn the techniques from Graph Theory which are useful in other areas of Mathematics. 	PSO1, PSO6
PROJECT VIVA	MTS6 P15 (PR)	<ul style="list-style-type: none"> • Explore & communicate a new area in Mathematics through a project of one-year duration 	PSO1

2.6.1 Describe Student Performance and Learning Outcome (60)

Teachers and students are aware of the stated Programme and course outcomes of the Programmes offered by the institution.

Describe Course Outcomes (COs) for all courses and mechanism of communication within a minimum of 500 characters and maximum of 500 words

Programme specific outcomes:

PSO's	M. Sc Mathematics Programme Specific Outcomes
PSO1	Equip the student with skills to analyse problems, formulate an hypothesis, evaluate and validate results, and draw reasonable conclusions thereof
PSO2	Provide a strong foundation in different areas of Mathematics, so that the students can compete with their contemporaries and excel in the various careers in Mathematics
PSO3	Nurture problem solving skills, thinking, creativity through assignments, project work
PSO4	Provide knowledge of a wide range of mathematical techniques and application of mathematical methods/tools in other scientific and engineering domains
PSO5	Facilitate integral development of the personality of the student to deal with ethical and professional issues, and also to develop ability for independent and lifelong learning.
PSO6	Motivate and prepare the students to pursue higher studies and research, thus contributing to the ever increasing academic demands of the country

Course outcomes

Name of the Course	Course code	Course outcomes	PSO addressed
Algebra – I	MTH1C01	<ul style="list-style-type: none">Students grasp the fundamental principles and theory concerning basic algebraic structures such as groups, rings, integral domains, fields and extension fields.	PSO1, PSO2
Linear Algebra	MTH1C02	<ul style="list-style-type: none">Understand the concepts of Linear independence, bases and Dual spaces.Discuss Algebra of Linear Transformations and Characteristics roots.	PSO2, PSO3

		<ul style="list-style-type: none"> • Study canonical forms and Nilpotent transformations & analyze rational canonical forms and Determinants • Understand the Hermitian, Unitary and Normal Transformations. 	
Real Analysis – I	MAT1C03	<ul style="list-style-type: none"> • Construct rigorous Mathematical proofs of basic results in Real analysis • Appreciate how abstract ideas and rigorous methods in Mathematical analysis can be applied to important practical problems. • Understand the axiomatic foundation of the real number system, in particular the notion of completeness and some of its consequences • Understand the concepts of limits, continuity, compactness, Differentiability, and Integrability 	PSO1, PSO2
Discrete Mathematics	MTH1C03	<ul style="list-style-type: none"> • Construct Mathematical arguments using logical connectives and quantifiers. • Learn to work with some of the discrete structures which include sets, relations, functions, graphs and recurrence relation. 	PSO3, PSO4
Number Theory	MTH1C05	<ul style="list-style-type: none"> • Provide an introduction to classical number theory • Enable to study higher courses in number theory, and to apply the learnt concepts of number theory • Create, select and apply appropriate number 	PSO6, PSO4

		theoretic techniques such as primes, greatest integer functions in real life problems.	
Ability Enhancement Course	MTH1A01	<ul style="list-style-type: none"> • Provide an opportunity to learn from professionals in the field of Mathematics • Presentation of seminar based on topics in Mathematics beyond the prescribed syllabus. • Initial steps towards research through case study/book reviews/paper presentations. 	PSO5,PSO6
Algebra- II	MTH2C06	<ul style="list-style-type: none"> • Applying the concept of a field extension to various Mathematical problems including geometric constructions and perfect division of a circle into n parts • Facility in working with mathematical problems that involve polynomial equations 	PSO2 , PSO4
Real Analysis II	MTH2C07	<ul style="list-style-type: none"> • Understand measure theory and integration from theoretical point of view • Apply the tools of measure theory in different fields of applications. 	PSO1, PSO2
Topology	MTH2C08	<ul style="list-style-type: none"> • To acquaint with the concept of Homeomorphism and the topological properties and important Mathematical concepts which can be generalized in topological spaces • Understand regular and normal spaces and some important theorems in these spaces 	PSO2
ODE & calculus of	MTH2C09	<ul style="list-style-type: none"> • Understand linear and non- 	PSO3, PSO4

variations		<p>linear differential equations and methods of solutions</p> <ul style="list-style-type: none"> • Get an idea to formulate a real world problem using Ordinary Differential Equations or system of Ordinary Differential Equations. 	
Operations Research	MTH2C10	<ul style="list-style-type: none"> • Formulate some real life problems into Linear programming problem • Use the simplex method to find an optimal vector for the standard linear programming problem and the corresponding dual problem • Prove the optimality condition for feasible vectors for Linear programming problem and Dual Linear programming problem • Find optimal solution of transportation problem and assignment problem 	PSO4, PSO3
Multivariable Calculus & Geometry	MTH3C11	<ul style="list-style-type: none"> • Consider theoretical foundations of concepts of Mathematical analysis, viz. derivative, Mean value theorems, functions of several variables • Foundation to the concepts of geometry of plane & space curves • Discuss Curvature, parametrization & torsion of curves and analyse it to study about the surface 	PSO1,PSO2
Complex Analysis	MTH3C12	<ul style="list-style-type: none"> • Demonstrate understanding and appreciation of deeper aspects of Complex analysis • Learn the basic techniques 	PSO1,PSO2

		<p>of contemporary Complex analysis</p> <ul style="list-style-type: none"> • Use methods of Complex analysis in various applications such as harmonic analysis, differential equations and in the applied disciplines 	
Functional Analysis	MTH3C13	<ul style="list-style-type: none"> • Explain the fundamental concepts of Functional analysis and their role in modern Mathematics and applied contexts • Demonstrate accurate and efficient use of Functional analysis techniques. 	PSO2, PSO4
PDE & Integral Equations	MTH3C14	<ul style="list-style-type: none"> • Learn modelling with partial differential equations and the basics of analytical methods to solve partial differential equations • Understand the formation and solution of some significant partial differential equations like wave equation, heat equation etc. • Apply the knowledge of PDEs and their solutions in order to understand physical phenomena 	PSO3, PSO4
Measure & Integration	MTH3E03	<ul style="list-style-type: none"> • Extend the knowledge of Lebesgue theory of integration by selecting and applying its tools for further research in related areas 	PSO6
Advanced Functional Analysis	MTH4C15	<ul style="list-style-type: none"> • Demonstrate capacity for mathematical reasoning through analyzing, proving and explaining concepts from Functional analysis. • Apply problem-solving using Functional analysis technique applied to 	PSO2, PSO4

		diverse situations in physics, engineering and other mathematical context.	
Algebraic Number Theory	MTH4E06	<ul style="list-style-type: none"> • Describe the properties of number fields with particular emphasis in examples on quadratic fields, where it is easy to calculate explicitly the properties of some of the objects being considered. • Learn about the arithmetic of algebraic number fields, theorems on integral bases, and unique factorization into ideals. 	PSO3, PSO4
Differential Geometry	MTH4E09	<ul style="list-style-type: none"> • Able to develop arguments in the geometric description of curves and surfaces • Establish basic properties of geodesics, parallel transport, Weingarten map etc. • Discuss parametrization of surface and their fundamental forms. 	PSO1, PSO3
Graph Theory	MTH4E11	<ul style="list-style-type: none"> • Understand the basic concepts of graphs, directed graphs, and weighted graphs and able to present a graph by matrices 	PSO4, PSO5
Project	MTH4P01	<ul style="list-style-type: none"> • Learn the basics of research theory and techniques • Understand how to do a literature review, and how to appraise the literature to address questions • Explore an area of interest, develop some expertise and a deeper understanding of a topic • Learn to communicate 	PSO5, PSO6

		scientific research in verbal presentations and written form.	
Viva Voce	MTH4V01	<ul style="list-style-type: none">• To reproduce the learnt topics and to interconnect various branches of the subject• Enhance the ability to communicate Mathematics effectively	PSO5, PSO6

MSc. Chemistry

Programme Specific Outcome

- To know about the fundamentals and applications of chemical Science.
- Easily assess the properties of all elements discovered.
- Helps in understanding the causes of environmental pollution and can open up new methods for environmental pollution control.
- Acquires the ability to synthesise, separate and characterize compounds using laboratory and instrumentation techniques.

Course Outcome

I Semester

CHE1C01: Quantum Mechanics and Computational Chemistry

- Introduction to the Postulates and general principles of Quantum Chemistry.
- To understand the Quantum Mechanics for translational, Vibrational, Rotational motion and in the case of Hydrogen like atoms.
- To know the need of approximation methods and to apply variation method, Perturbation method and Hartree's self consistent field method.
- To know the basics of Computational Chemistry methods like molecular mechanics method, electronic structure method, ab initio and semi - empirical methods and post HF methods.

CHE1C02:Elementary Inorganic Chemistry

- To know different theories of acids and bases.
- Explains the chemistry of non aqueous solvents.
- To know about electron deficient compounds, Styx numbers, Phosphorous- Nitrogen, and Sulphur - Nitrogen compounds.
- To understand the Nuclear reactions and it's theories.
- To introduce the concept of Nanotechnology.

CHE1C03: Structure and reactivity of Organic Chemistry

- To describe the structure and bonding in organic molecules.
- To analyse the conformations of different organic molecules like cyclohexane, dibromocyclo hexanone, etc.
- To explain the optical isomerism of atoms that do not contain an asymmetric carbon atoms.
- To describe the substrate controlled asymmetric synthesis, chiral auxillary controlled controlled asymmetric synthesis, chiral reagent controlled asymmetric synthesis and asymmetric aldol reaction.

CHE1C04 THERMODYNAMICS,KINECTICS AND CATALYSIS

- To describe the basis of thermodynamics of reversible and irreversible processes.
- To explain the Rize -herzfield mechanism and steady state approximations.
- Explain the kinetics of fast reactions.
- To explain the theory of unimolecular reactions, Eley - Rideal mechanism

II Semester

CHE2C05: Group Theory and Chemical Bonding

- To understand the foundations of Group theory and molecular symmetry.
- To represent the point group and corresponding theorems like GOT
- To describe the construction of SALC using Projection operators.
- To explain IR and Raman active modes of different molecules.

CHE2C06: Coordination Chemistry

- To explain the classification of redox reaction mechanism of coordination complexes.
- To describe the theories of bonding in coordination compounds.
- To analyse the electronic spectra and magnetic properties of complexes.
- To know the reaction mechanism of metal complexes and redox and photochemical reactions of complexes.

CHE2C07: Reaction Mechanism in Organic Chemistry

- To understand the aliphatic and aromatic nucleophilic, electrophilic substitution, addition and elimination reaction with mechanism and stereochemical aspect.
- To impart the students in depth knowledge in about the basic concept and theories of Pericyclic Reactions and to get an idea about the orbital overlap in chemical reaction.
- To enable the students to acquire proper knowledge about photochemical reactions with mechanism.
- To explain the isolation and general methods of structure elucidation of different natural products.

CHE2C08: Electrochemistry, solid state Chemistry and Statistical Thermodynamics.

- To explain the equilibrium electrochemistry and its ionic interactions.
- To know about the solid state chemistry
- Explain classical and quantum theories of heat capacities of solids and Einstein's theory of atomic crystals.
- Explain the relationship between Maxwell-Boltzman, Bose-Einstein and Fermi Dirac statistics.

CHE1L01 & CHE2L04: Inorganic Chemistry Practicals -I & II

- To develop ability to analyse the cation mixture .
- To estimate the ions by volumetric titrations .
- To develop the ability to determine the metal ion colorimetrically.

CHE1L02 & CHE2L05 -Organic Chemistry Practicals - I & II

- To develop an ability to separate the mixture of organic compounds .
- To develop an ability to find out the melting and boiling points of the compounds .
- To prepare organic compounds by two or three steps

CHE1L03 & CHE2L06: Physical Chemistry I & II

- To develop skill to perform different physical experiments.

III semester

CHE3C09: Molecular Spectroscopy

- To give knowledge about the basic concepts and theories of microwave spectroscopy, IR, Raman, NMR and electronic spectroscopy .
- To develop an ability to calculate UV λ_{max} value of compounds .
- To develop an ability to analyse spectrum and find out the correct structure of compounds as an application of spectroscopy .

CHE3C10: Organometallic and Bioinorganic Chemistry

- To develop knowledge about linear and cyclic pi systems.
- To know the Organometallic reactions and catalysis.

- To know the metal cluster compounds and its reactions.
- To develop knowledge in Bioinorganic Chemistry.

CHE3C11: Reagents and Transformations in Organic Chemistry

- An ability to apply synthetic reagents like DABCO, DMAP, DDQ, oxane etc in organic synthesis
- To enable the students to acquire proper knowledge about various methods of oxidation and reduction reagents .
- To know about the heterocyclic compounds and its coupling reactions.
- To know about the molecular rearrangements and its transformations.
- To understand different types of polymers and its properties.

CHE3E01: Synthetic Organic Chemistry

- Ability to apply organometallic and metallic reagents for synthesis of organic compounds
- To enable the students to acquire proper knowledge about various methods of oxidation and reduction reagents .
- To determine the chemistry of carbonyl compounds.
- To obtain an idea about the retrosynthetic analysis.

IV semester

CHE4C12: Instrumental Methods of Analysis

- To develop an ability to describe the errors in chemical analysis.
- To develop ability to understand the theory of gravimetric analysis, redox titrations, complexometric titrations etc.
- To explain the electroanalytical methods like potentiometry, polarography and their applications.
- State the fundamental laws of spectrophotometry, nephelometry, turbidometry and fluorimetry etc.
- Explain different chromatographic methods, detectors and CHN analysis by GC.

CHE4E05: Industrial Catalysis

- To give an introduction to Adsorption process
- To explain the kinetics of heterogeneous catalysis .
- To know different preparative methods of catalysts and the shape selective catalyst - zeolite.
- To understand the differences between soluble and insoluble phase transfer catalysts.
- To obtain an idea about the deactivation and regeneration of catalysts.
- To familiarize catalysis for environmental protection and removal of pollutant from exhausts.

CHE4E08: Organometallic Compounds

- To know the Organometallic reactions and catalysis.
- To explain synthesis , structure, bonding and reactions of Organometallic pi complexes.
- To obtain the idea about the Organometallic polymers and its synthesis and reactions.
- To develop awareness about the applications of organometallic compounds.

CHE3L07 & CHE4L10 -Inorganic Chemistry Practical III & IV

- Ability to quantitatively separate binary mixtures of ions in solution and estimation by volumetric, colorimetric or gravimetric methods
- To estimate binary mixtures by ion exchange separation.
- To estimate different metals after separation from other ions in solution by solvent extraction colorimetrically.

CHE3L08 & CHE4L11: Organic Chemistry Practicals - III & IV

- To estimate reducing sugar, Amino group, Phenolic group volumetrically and streptomycin colorimetrically.
- To develop a skill in the extraction of natural products and purification by column and TLC
- To expertise in Chromatographic technique by the use of Rf value measurements .

Department of physics 2020-2021

Programme Specific Outcomes

PSO1: Understand the basic concepts of fundamentals of mechanics, properties of matter and electrodynamics

PSO2: Understand the theoretical basis of quantum mechanics, relativistic physics, nuclear physics, optics, spectroscopy, solid state physics, astrophysics, statistical physics, photonics and thermodynamics

PSO3: Understand and apply the concepts of electronics in the designing of different analog and digital circuits

PSO4: Understand the basics of computer programming and numerical analysis

PSO5: Apply and verify theoretical concepts through laboratory experiments

PHY1 B01: MECHANICS – I

C01 Understand and apply the basic concepts of Newtonian Mechanics to Physical Systems PSO1

C02 Understand and apply the basic idea of work-energy theorem to physical systems PSO1

C03 Understand and apply the rotational dynamics of rigid bodies PSO1

PHY 2 B02: MECHANICS – II

C01 Understand the features of non-inertial systems and fictitious forces PSO1

C02 Understand and analyze the features of central forces with respect to planetary forces PSO1

C03 Understand the basic ideas of Harmonic Oscillations PSO1

C04 Understand the analyze the basic concepts of wave motion PSO1

PHY3B03: ELECTRODYNAMICS I

C01 Understand and apply the fundamentals of vector calculus PSO1

C02 Understand and analyze the electrostatic properties of physical systems PSO1

C03 Understand the mechanism of electric field in matter. PSO1

C04 Understand and analyze the magnetic properties of physical systems PSO1

C05 Understand the mechanism of magnetic field in matter. PSO1

PHY4B04: ELECTRODYNAMICS II

C01 Understand the basic concepts of electrodynamics PSO1

C02 Understand and analyze the properties of electromagnetic waves PSO1

CO3 Understand the behavior of transient currents PSO1

CO4 Understand the basic aspects of ac circuits PSO1

CO5 Understand and apply electrical network theorems PSO1

PHY5B06: COMPUTATIONAL PHYSICS

CO1 Understand the Basics of Python programming PSO4

CO2 Understand the applications of Python modules PSO4

CO3 Understand the basic techniques of numerical analysis PSO4

CO4 Understand and apply computational techniques to physical problems PSO4

PHY5B07: QUANTUM MECHANICS

CO1 Understand the particle properties of electromagnetic radiation PSO2

CO2 Describe Rutherford – Bohr model of the atom PSO2

CO3 Understand the wavelike properties of particles PSO2

CO4 Understand and apply the Schrödinger equation to simple physical systems PSO2

CO5 Apply the principles of wave mechanics to the Hydrogen atom PSO2

PHY5B08: OPTICS

CO1 Understand the fundamentals of Fermat's principles and geometrical optics PSO2

CO2 Understand and apply the basic ideas of interference of light PSO2

CO3 Understand and apply the basic ideas of diffraction of light PSO2

CO4 Understand the basic ideas of polarization of light PSO2

CO5 Describe the basic principles of holography and fibre optics PSO2

PHY5B09: ELECTRONICS (ANALOG & DIGITAL)

CO1 Understand the basic principles of rectifiers and dc power supplies PSO3

CO2 Understand the principles of transistor PSO3

CO3 Understand the working and designing of transistor amplifiers and oscillators PSO3

CO4 Understand the basic operation of Op – Amp and its applications PSO3

CO5 Understand the basics of digital electronics PSO3

PHY6B10: THERMODYNAMICS

CO1 Understand the zero and first laws of thermodynamics PSO2

CO2 Understand the thermodynamics description of the ideal gas PSO2

CO3 Understand the second law of thermodynamics and its applications PSO2

CO4 Understand the basic ideas of entropy PSO2

CO5 Understand the concepts of thermodynamic potentials and phase transitions PSO2

PHY6B11: STATISTICAL PHYSICS, SOLID STATE PHYSICS, SPECTROSCOPY & PHOTONICS

CO1 Understand the basic principles of statistical physics and its applications PSO2

CO2 Understand the basic aspects of crystallography in solid state physics PSO2

CO3 Understand the basic elements of spectroscopy PSO2

CO4 Understand the basics ideas of microwave and infra red spectroscopy PSO2

CO5 Understand the fundamental ideas of photonics PSO2

PHY6B12: NUCLEAR PHYSICS AND PARTICLE PHYSICS

CO1 Understand the basic aspects of nuclear structure and fundamentals of radioactivity PSO2

CO2 Describe the different types of nuclear reactions and their applications PSO2

CO3 Understand the principle and working of particle detectors PSO2

CO4 Describe the principle and working of particle accelerators PSO2

CO5 Understand the basic principles of elementary particle physics PSO2

PHY6B13: RELATIVISTIC MECHANICS AND ASTROPHYSICS

CO1 Understand the fundamental ideas of special relativity PSO2

CO2 Understand the basic concepts of general relativity and cosmology PSO2

CO3 Understand the basic techniques used in astronomy PSO2

CO4 Describe the evolution and death of stars PSO2

CO5 Describe the structure and classification of galaxies PSO2

PHY6B14 (EL3): MATERIALS SCIENCE

CO1 Understand the basic ideas of bonding in materials

CO2 Describe crystalline and non crystalline materials

CO3 Understand the types of imperfections and diffusion mechanisms in solids

CO4 Describe the different properties of ceramics and polymers

CO5 Describe the different types of material

PHY4B05: PRACTICAL I

CO1 Apply and illustrate the concepts of properties of matter through experiments

CO2 Apply and illustrate the concepts of electricity and magnetism through experiments

CO3 Apply and illustrate the concepts of optics through experiments

CO4 Apply and illustrate the principles of electronics through experiments

PHY6B15: PRACTICAL II

CO1 Apply and illustrate the concepts of properties of matter through experiments

CO2 Apply and illustrate the concepts of electricity and magnetism through experiments

CO3 Apply and illustrate the concepts of optics and spectroscopy through experiments

CO4 Apply and illustrate the principles of heat through experiments

PHY6B16: PRACTICAL III

CO1 Apply and illustrate the principles of semiconductor diode and transistor through experiments

CO2 Apply and illustrate the principles of transistor amplifier and oscillator through experiments

CO3 Apply and illustrate the principles of digital electronics through experiments

CO4 Analyze and apply computational techniques in Python programming

Course: PHY6B17(P) – PROJECT

CO1 Understand research methodology

CO2 Understand and formulate a research project

CO3 Design and implement a research project

CO4 Identify and enumerate the scope and limitations of a research project

DEPARTMENT OF COMPUTER APPLICATION

Programme: B.C.A(2019 Admissions)

2.6.1 Describe student performance and learning outcomes (60)

Teachers and students are aware of the stated programme and course outcomes of the programmes offered by the institution.

1. Programme outcome:

PO No.	Programme Outcomes
	Upon completion of the B.C.A Degree Programme, the graduate will be able to
PO1	Acquire and Apply Knowledge: Ability to understand and apply the fundamental principles, concepts and methods in key areas of Computer Applications and multidisciplinary fields.
PO2	Problem Analysis: Ability to analyze real-time problems using various tools and techniques.
PO3	Design and Development: Ability to design and develop solutions to meet the desired needs
PO4	State-of-art Technologies: Ability to adapt and apply emerging tools and technologies.
PO5	Entrepreneurship and Innovation: Ability to provide sustainable and innovative solutions for real-time problems.

2. Programme Specific Outcomes (PSOs)

PSO No.	Programme Specific Outcomes
	Upon completion of these courses the student would
PSO 1	The program provides students with skills in the problem statement, analysis, implementation and testing.
PSO 2	Prepares the students ability to adapt to various hardware and software platforms.
PSO 3	Equips students with advanced analytical skills in computer science, statistics and Mathematics.
PSO 4	Provides students skills to enhance careers in the public and private sectors.
PSO 5	Apply the recent technology in various domains and evaluate the methods of implementing it.
PSO 6	Students will learn relevant managerial accounting career skills, applying both Quantitative and qualitative knowledge to their future careers in business.
PSO 7	Design and Create innovative ideas that meet the requirements of software industry.

Course outcomes

COURSE TITLE	CODE	COURSE OUTCOME	PSO ADDRESSED
Computer Fundamentals and HTML	BCA1B01	CO1. Understand the students with fundamentals of Computer CO2. Understand the basics of Computer organization C2 CO3. Understand the students to write algorithm and draw flow chart for solving simple problems CO4. Understand the basics of Internet and webpage design	PSO 1
Mathematical Foundation for Computer Applications	BCA1C01	CO1. Understand the basic principles of linear algebra and vectors. CO2. Understand the basic principles of differential and integral Calculus. CO3. Understand mathematical modelling using ordinary and partial equation CO4. Understand the acquired knowledge of formal languages to the engineering areas	PSO 3
Discrete Mathematics	BCA1C02	CO1. Understand mathematical logic and Boolean algebra. CO2. Understand an argument using logical notation and determine if the argument is or is not valid. CO3. Acquire ability to describe computer programs CO4. Students understand to use tree and graph algorithms to solve problems	PSO 3
Problem Solving Using C	BCA2B02	CO1. Understand the students with fundamental principles of Problem Solving aspects. CO2. Understand the concept of programming CO3. Understand C language CO4. Students understand to write programs for solving simple computing problems	PSO 1
Financial and Management Accounting	BCA2C03	CO1. Understand general introduction on accounting and its general applications. CO2. understand on various tools for financial statement analysis. CO3. Understand on accounting procedures	PSO 6

		<p>up to the preparation of various financial Statements.</p> <p>CO4.Understand general understanding of the important tools for managerial decision making.</p>	
Operations Research	BCA2C04	<p>CO1.Understand general introduction in solving linear programming problems.</p> <p>CO2.Understand general understanding of network analysis technique.</p> <p>CO3.Understand general understanding of different mathematical models.</p> <p>CO4. Analyze any real life system with limited constraints and depict it in a model form.</p>	PSO 3
Python Programming	A11	<p>CO1.Understand various statements, data types and functions in Python</p> <p>CO2.Develop programs in Python programming language</p> <p>CO3.Understand the basics of Object oriented programming using Python</p> <p>CO4. Interpret the fundamental Python syntax and semantics and be fluent in the use of Python control flow statements.</p>	PSO 7
Data Communication and Optical Fibers	A12	<p>CO1.Understand the basics of signal propagation through optical fibers, fiber impairments, components and devices and system design.</p> <p>CO2. Estimate the losses and analyze the propagation characteristics of an optical signal in different types of fibers .</p> <p>CO3.Describe the principles of optical sources and power launching-coupling methods.</p> <p>CO4.Compare the characteristics of fiber optic receivers</p>	PSO 2
Data Structures Using C	BCA3B04	<p>CO1. Understand the concept of data structures</p> <p>CO2. Understand the students aware of various data structures</p> <p>CO3. Understand the students implement fundamental data structures</p> <p>CO4. Ability to describe stack, queue and linked list operation.</p>	PSO 7
Computer Oriented Numerical & Statistical Methods	BCA3C05	<p>CO1. Understand the floating point arithmetic</p>	PSO 3

		<p>CO2. Learning to solve linear equations. Understand numerical differentiation and integration.</p> <p>CO3. Understand the basics of statistics and probability theory</p> <p>CO4. Understand solution of algebraic and transcendental equation by numerical methods like Bisection method and Newton Rapshon method.</p>	
Theory of Computation	BCA3C06	<p>CO1. Understand general introduction to the theory of Computer Science</p> <p>CO2. Understand general understanding on different languages, grammar and automata</p> <p>CO3. Analyze and design finite automata, pushdown automata, Turing machines, formal languages, and grammars.</p> <p>CO4. Understand context free grammar for various languages</p>	PSO 5
Microprocessors Architecture and Programming	A13	<p>CO1. Understand internals of Microprocessor.</p> <p>CO2. Understand architecture of 8085 Microprocessor</p> <p>CO3. Understand instruction set of 8085 Microprocessor</p> <p>CO4. Understand how to program a Microprocessor</p>	PSO 2
Sensors and Transducers	A14	<p>CO1. Understand resistance, inductance and capacitance transducers.</p> <p>CO2. Perceive the concepts of temperature and pressure transducers.</p> <p>CO3. Perceive the concepts level transducers such as and flow transducers</p> <p>CO4. Understand Electromagnetic transducers and radiation sensors</p> <p>CO5. Understand force and torque transducers and sound transducers</p>	PSO 3
Database Management System and RDBMS	BCA4B05	<p>CO1. Understand the basic principles of database and database design</p> <p>CO2. Understand the basics of RDBMS</p> <p>CO3. Understand the concepts of database manipulation SQL</p> <p>CO4. Understand PL/SQL language</p>	PSO 4,PSO 7
E-Commerce	BCA4C07	<p>CO1. Understand the introduction of the Electronic Commerce framework.</p> <p>CO2. Understanding on the various</p>	PSO 5,PSO 7

		<p>electronic payment systems.</p> <p>CO3. Understanding on the Internal information systems.</p> <p>CO4. Understanding on the new age information.</p>	
Computer Graphics	BCA4C08	<p>CO1. Understand the basics of Computer Graphics.</p> <p>CO2. Be capable of using OpenGL to create interactive computer graphics.</p> <p>CO3. Understand a typical graphics pipeline.</p> <p>CO4. Have made pictures with their computer.</p>	PSO 2, PSO 5
Java Programming	BCA5B07	<p>CO1. Understand the concept of OOP.</p> <p>CO2. Understand Java Programming Environments.</p> <p>CO3. Practice programming in Java.</p> <p>CO4. Understand GUI Application development in JAVA.</p>	PSO 1, PSO 4, PSO 7
Computer Organization & Architecture	BCA5B08	<p>CO1. Understand logic gates, combinational circuits and sequential circuits</p> <p>CO2. Understand basics of computer organization and architecture</p> <p>CO3. Identify, compare and assess issues related to ISA, memory, control and I/O functions</p> <p>CO4. Design and analyze solutions in the area of computer architecture</p>	PSO 2
Web Programming using PHP	BCA5B09	<p>CO1. Understand the concept of OOP.</p> <p>CO2. Write PHP scripts to handle HTML forms</p> <p>CO3. Create PHP programs that use various PHP library functions, and that manipulate files and directories.</p> <p>CO4. Analyze and solve common web application tasks by writing PHP programs.</p>	PSO 1, PSO 4, PSO 5
Principles of Software Engineering	BCA5B10	<p>CO1. Understand engineering practices in Software Development.</p> <p>CO2. An ability to identify, formulate and solve complex engineering problems</p> <p>CO3. An ability to communicate effectively with a range of audiences</p> <p>CO4. An ability to function effectively on a team whose members together provide leadership.</p>	PSO 1, PSO 4
Introduction to Computers and	BCA5D01	<p>CO1. Understand Office Automation.</p>	PSO 5

Office Automation		CO2. Understand documentation CO3. Understand accounting operations CO4. Understand presentation skills	
Web Designing	BCA5D02	CO1. Understand Web designing CO2. Be able to use the HTML programming language CO3. Be able to use the design programs CO4. Uses the program web page maker	PSO 5
Introduction to Problem Solving and C Programming	BCA5D03	CO1. Understand fundamental principles of Problem Solving aspects. CO2. Understand the concept of programming. CO3. Understand C language.	PSO 7
Introduction to Data Analysis using Spread sheet	BCA5D04	CO1. Understand the importance of software tools. CO2. Understand the Analysis using Spread sheets. CO3. The ability to analyze data	PSO 5
Android Programming	BCA6B11	CO1. Understand a review on concept of Android programming. CO2. Understand Android Programming Environments. CO3. Understand programming in Android. CO4. Understand GUI Application development in Android platform with XML	PSO 5,PSO 7
Operating Systems	BCA6B12 B	CO1. Understand objectives & functions of Operating Systems. CO2. Understand processes and its life cycle. CO3. Understand various Memory and Scheduling Algorithms. CO4. Understand an overall idea about the latest developments in Operating Systems	PSO 5,PSO 7
Computer Networks	BCA6B14	CO1. Understand about transmissions in Computer Networks. CO2. Understand various Protocols used in Communication. CO3. Understand general idea on Network Administration.	PSO 4,PSO 5
Practical's			
HTML and Programming in C	BCA2B03	CO1. Understand the students learn web designing CO2. Understand the	PSO 1,PSO 5,PSO 7

		<p>students learn programming environments.</p> <p>CO3.Understand procedural programming concepts.</p> <p>CO4.Understand the students equipped to solve mathematical or scientific problems using C</p>	
Data Structures and RDBMS	BCA4B06	<p>CO1.Understand the students equipped to solve mathematical or scientific problems using C</p> <p>CO2.Understand how to implement various data structures.</p> <p>CO3.opportunity to students to use data structures to solve real life problems.</p>	PSO 1,PSO 5,PSO 7
Java and PHP Programming	BCA6B14	<p>CO1.Understand Java programming.</p> <p>CO2.Understand client side and server side scripting.</p> <p>CO3.Understand PHP Programming.</p> <p>CO4.Understand developing dynamic websites.</p> <p>CO5.Understand how to interact with databases through PHP.</p>	PSO 1,PSO 5,PSO 7
Android and Linux Shell Programming	BCA6B15	<p>CO1.Understand Android programming.</p> <p>CO2.Understand user interface applications.</p> <p>CO3.Understand mobile application.</p> <p>CO4.Understand shell programming</p>	PSO 1,PSO 5,PSO 7
Industrial Visit and Project Work	BCA6B17	<p>CO1.Understand practical knowledge on software development process</p>	PSO 1,PSO 5,PSO 7

semest er	Programme	Modul e	Objective	outcome
1	Biochemistry SDC1BC01	1	To study about carbohydrates	Learn to identify properties and uses of different types of carbohydrates in everyday life
		2	To learn about lipids and its classifications	Acquired the knowledge about how lipids are important for body activities
		3	To study about proteins and basic studies of nucleic acids	Get the features about proteins and how they are classified.
		4	To study about importance of enzymes and co enzymes	Can able to understand enzyme mechanism in the body
		5	To study about the different classes of vitamins	Understood the role of vitamins and minerals to regulate the body and environment.
	Theoretical and Inorganic Chemistry I - GECIIC01	1	To learn about hypothesis, scientific statements, origin and branches of chemistry	Students able to get the ideas on research methods and steps.
		2	To introduce basic chemical concepts like symbol of elements, atomic and mass number, isotopes, isobars, oxidation number and valency	Can differentiate and do molarity, molality,
		3	To give awareness about material safety data sheet(MSDS), R and S phrases and to study about volumetric analysis and indicators	Able to understand the different types of laboratory safety signs and also becomes to give proper first aid treatments.

		4	Historical development of concept of an atom, wave nature and quantum theory	Will get detailed structure of an atom and different types of theories related to it.
		5	To study about nuclear chemistry like isotopes and isobars, half life, rate of decay, nuclear fission and fusion and applications of radioactivity.	Got awareness about nuclear reactors, concept of hydrogen bomb and precautions during radiation reactions.
	Theoretical and Inorganic Chemistry II-GECIIC02	1	To introduce quantum chemistry, wave properties and Schrödinger wave equation.	Know more about different types and shapes of orbital
		2	To study more about periodic table and its properties.	Can recognize the periodicity in properties of different groups
		3	To study different types of bonds and related theories	Got the theories regarding polarity of compounds.
		4	To give ideas	Can identify and

			on molecular orbitals and molecular orbital theory(LCAO)	differentiate the molecular orbitals and atomic orbitals.
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semester	Programme	Module	Objective	outcome
II	Microbiology SDC2MB01	1	To introduce the different types of microorganisms and their control	Able to identify different types of microbes of their features.
		2	Studies about sterilization and disinfection methods using physical and chemical agents	Attain the idea on difference between disinfection and sterilization
		3	Brief study on immunity and antigen antibody reaction	Learned the immunity system in the body
	Human Anatomy And Physiology SDC2HA01	1	To study about human body parts and anatomy	Detailed knowledge about total human body parts.
		2	To get the idea on human skeletal and nervous system	Learned more on different skeletal properties and diseases.
		3	To learn about cardiovascular and respiratory system	Got the knowledge about regulation of heart and lungs.
		4	Studied about maintaince of human body	Detailed idea on human digestive,urinary and endocrine system
	Physical Chemistry- GEC2PC01	1	Detailed study on gaseous state - kinetic theory of gases, ideal and real gas behavior	Able identify the difference of ideal gas from real gas and well known about different types of velocities.
		2	To study laws of thermodynamics and concept of entropy.	Able to apply thermodynamic concept
		3	Heat isotherm and enthalpy studies	Studied the differences between enthalpy

				and entropy
		4	Detailed study on liquid state	Learned about the properties of liquids and able to determine the viscosity measurements.
		5	To learn equilibrium concept and relation between K_p , K_c and K_x	Understand importance of equilibrium in chemical reaction

semester	Programme	Module	Objective	outcome
III	Advanced Pharmaceutical Operations And Inorganic Pharmaceutical Chemistry- SDC3PIC01	1	To study about acids, bases, buffers, antioxidants and chemistry of glasses	Able to identify pharmaceutical glasses and role of water in pharmaceuticals
		2	Detailed study on radiopharmaceuticals like storage uses etc.	Can differentiate the merits and demerits of radiopharmaceutical including ROCM and their biological hazards.
		3	Physiological acid base balance concept	Learned about importance of electrolyte balance in the body and their replacement therapy.
		4	Detailed study on different types of function tests and compounds and dyes used for it.	Recognized the various diagnostic agents and dyes.
	Pharmaceutics - SDC3PC01	1	To give Introduction about pharmaceutical dose calculation and the factors	Learn knowledge about to calculate dose and different routes of drug administration

			affecting on it	and t
		2	To study measures and weights in pharmacy	Students able to understand and calculate dilution and concentration of formulation and to calculate dose
		3	To study handling of prescription, sources of errors in prescription and to understand about incompatibilities in prescription	Students would get more awareness about the latin terms used in prescription and understood about the modern dispensing methods in pharmacy
		4	To give knowledge about community pharmacy organization, structure, more about wholesale and retail pharmacies.	Able to maintain the records in pharmacy and got ideas about inventory control
		5	Students get knowledge about the pharmaceutical care and communicable diseases.	Become more conscious about different types of communicable diseases and its control methods. Able to handle emergency situations.
		6	To study the requirements of balanced diet, nutritional deficiency disorders and family planning.	Well known about nutritional deficiency disorders and first aid resuscitation methods.
	Organic Chemistry-I- GEC30C01	1	To introduce history of organic chemistry, classification and isomerism of organic compounds	Can identify the structural and stereo isomerism
		2	To study to represent the organic molecules by different isomerism	Able to do of stability studies of organic compounds by comparing its

				various isomeric structures.
		3	To introduce the different types of reactions and its mechanism	Can identify the stable compounds by each reaction mechanism
		4	To study details of aliphatic hydro carbons includes alkanes, alkenes and alkynes	Learn to name each organic compound and rules involved in its reactions.
		5	To study about nomenclature and isomerism of substituted benzene.	Well known about stability studies of benzene with regards to its substitution and addition reaction.
		6	To learn about aromaticity including Huckle's rule	Able to learn more about benzene substituted compounds.
IV	Drug Design And Pharmacology SDC4DP01	1	To study about drug synthesis , design and general principles of drug therapy	Students will get more concept about how various factors affect the drug design and how drug will metabolized in the body.
		2	To introduce the pharmacodynamic and pharmacokinetics of drugs	Learned about how the drug act to the body and how body response to the drug

		3	Study the metallic compounds used in pharmaceutical field	Able to get the concept and importance of metallic compounds like calcium gluconate , iron gluconate , platinum etc as drug
		4	To study about general anesthetics, anxiolytics , hypnotic and synthesis of related drugs.	Students can understand various methods to synthesis the different class of drugs and mechanism of action of sedatives, hypnotics and anxiolytics
		5	To give introduction about the narcotics and analgesics	Students are able to understand information regarding gout and morphine and its analogues,
	Indian Drug Regulatory Guidelines And Physical Pharmacy-SDC4DR01	1	To study the basis of Good Laboratory Practices(GLP)	Students well known about the laboratory precautions and hygiene methods
		2	To learn about the new drug approval by NDA	Can Recognize the various steps involved in each drug approval.
		3	To give knowledge regarding occupational health and hazards, safety at workplace	Acquired the information regarding expected hazards in pharma industries and accident prevention techniques and safety management system
		4	Pharmaceutical legislation in India ,drug and cosmetic act and rules.	Students got in formations regarding legal aspects pharmacy field. Able to differentiate trade

				mark, copy rights and ipr
	Inorganic Chemistry- GEC4IC04	1	To study about inorganic and organic qualitative analysis of micro experiments.	Can able to get ideas about solubility of compounds on the basis of common ion effect and solubility product.
		2	To study in detail about group 1,2,13,14 elements of periodic table	Knowledge about representative elements 1,2,13, 14 group
		3	To learn more about the periodic elements from group 15-18	Can compare the properties of group 15-18
		4	To study about different types of inorganic polymers	Earn knowledge about industrial and technological application of inorganic polymers.
		5	To study different types of pollution	Can get the ideas to control pollutions.
		6	To learn different type waste managements systems	Awareness about the importance of proper waste disposal.

semester	Programme	Module	Objective	outcome
V	Organic chemistry II- GEC5OC02	1	To study about halogen compounds	Can able to name the halogen compounds and its reactions.
		2	To learn hydroxyl compounds like alcohol and phenol	Can differentiate the hydroxyl groups.
		3	To study about aldehydes and ketones	Can get knowledge about chemical properties of aldehydes and ketones
		4	To learn about carboxylic acids	Can study about chemical properties of carboxylic acid
		5	To learn about nitrogen compounds	Can get knowledge about amines, Nitro compounds
		6	To study in detail about heterocyclic and methylene compounds	Acquire more knowledge about preparation and properties of furan, pyridine, indole and methylene compounds
	Physical chemistry-II GEC5PH02	1	Studies about kinetics and catalysis of reactions	More ideas about different types of

				catalysis reaction and methods to determine order of reaction
		2	To introduce photochemical processes	Can differentiate between thermal and photochemical processes
		3	To study differences between absorption and adsorption and about colloidal properties	Learn applications of colloids and adsorption
		4	To study chromatographic techniques	Learn principles behind different chromatographic techniques and its applications
		5	Introduction to spectroscopy	Importance of spectroscopy in pharmaceutical field
	Pharmaceutical management - GEC5PM01	1	To give ideas on concept of management	Able to make decisions and improve the leadership quality
		2	To study about drug regulatory affairs	Well-known about procedure for export and import of drugs
		3	To study about pharmaceutical marketing	Steps involved in pharmaceutical marketing

		4	To give knowledge on salesmanship	Ideas on sales promotion
		5	To study market research process	Get concept about market demand and targeting
		6	A brief study on material management	Basic principles about purchase, inventory control
		7	Introduction to production management	Students will exposure to the different aspects of production management
	Medicinal chemistry- SDC5MC01	1	To study drugs acting on ANS	More knowledge about mechanism of action of drugs on ANS
		2	Introduction to drugs acting on CVS	Studied CVS drugs and its mode of action
		3	Drugs used for chemotherapy	Knowledge about antibiotics, antitubercular agents, anti viral drugs
		4	Introduction of antineoplastic agent	Study about antineoplastic drugs
		5	To study psychopharmacological agents	Knowledge about tranquilisers
		6	Common diuretics, hypoglycemic agents and anti-tussives	Familiar with diabetic drugs and diuretics

	Health education and community pharmacy- SDC5EV01	1	To give concept of health and related diseases	Awareness about different types of health and prevention of health diseases
		2	Brief study on nutrition	Conscious about nutritional requirement and deficiency diseases
		3	First aid methods in different emergency situations	Can able to give first aid
		4	Epidemiological studies	Learn about disease transmission and immunization
	Introduction to Pharmacognosy- SDC5EV02	1	To introduce history and development of pharmacognosy	Familiar with scope of pharmacognosy in pharmaceutical field
		2	To study plant tissue and morphology	Knowledge about morphology of root, stem, bark, leaf etc
		3	To study the plant taxonomy	Learn medicinally important plants
		4	To study pharmacognostic studies of resin containing drugs	Studied about drugs containing resins
		5	About classification properties and chemical test of tannin containing	Learn more about tannin drugs

			drugs	
		6	Detail study on volatile oil containing drugs	Studied different natural drugs containing volatile oil
		7	To introduce basic principles of extraction process	Familiar with separation of active constituents from medicinal plants



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