MILAD-E-SHERIEF MEMORIAL COLLEGE

Accredited by NAAC with 'B' Grade

KAYAMKULAM-690502
KERALA STATE- SOUTH INDIA
(A Minority Community Educational Institution)
Affiliated to the University of Kerala
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Programme Outcomes, Course Outcomes and Programme Specific Outcomes

Graduate Programme Outcomes (BA/BSc/BCom)

PO1	**Critical Thinking**: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.
PO2	**Academic Intelligence**: Ability to acquire knowledge and skills, including "learning how to learn", that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at attaining domain proficiency in their respective subject which can foster in each problem-solving skill in their day today life.
PO3	**Communication**: Speak, read, write and listen clearly in person and through electronic media in English/language of the discipline, and make meaning of the world by connecting people, ideas, books, media and technology.
PO4	**Research Aptitudes**: A sense of inquiry and capability for asking relevant/appropriate questions, problematising, synthesising and articulating; Ability to define problems, formulate hypotheses, test hypotheses, analyse, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation.
PO5	**Environment and Sustainability:** Understand the impact of technology and business practices in societal and environmental contexts, and sustainable development.
PO6	**Social Interaction:** Elicit views of others, mediate disagreements and help reach conclusions in group settings.
PO7	**Problem Solving**: Identify, formulate, conduct investigations, and find solutions to problems based on in-depth knowledge of relevant domains.
PO8	**Computational Thinking:** Understand data-based reasoning through translation of data into abstract concepts using computing technology-based tools.

GENERAL ENGLISH

COURSE CODE	COURSE NAME	COURSE OUTCOMES	
SEMESTER I			
EN 1111.1	**Language Course 1: Listening, Speaking, and Reading**	**CO1**	To make the students proficient communicators in English
		CO2	To develop in the learners the ability to understand English in a wide range of contexts
		CO3	Understanding the nuances of listening, speaking and reading English
		CO4	To face situations with confidence and to seek employment in the modern globalized world
		CO5	Knowledge of English phonetics will help the students to listen and to speak English better
EN 1121	**Foundation Course 1: Writings on Contemporary Issues**	**CO1**	To sensitize students to the major issues in the society and the world.
		CO2	To encourage them to read literary pieces critically
SEMESTER II			
EN 1211.1	**Language Course 3: Environmental Studies**	**CO1**	Analyze the interrelationship between living organism and environment.
		CO2	Understand the importance of environment by assessing its impact on the human world.
		CO3	Enrich the knowledge on themes of biodiversity, natural resources, pollution control and waste management.
		CO4	Understand the constitutional protection given for environment.

EN 1212.1	**Language Course 4: Modern English Grammar and Usage**	**CO1**	To help students have a good understanding of modern English grammar.
		CO2	To enable them produce grammatically and idiomatically correct language.
		CO3	To help them improve their verbal communication skills.
		CO4	To help them minimise mother tongue influence.
SEMESTER III			
EN 1311.1	**Language Course 6: Writing and Presentation Skills**	**CO1**	To familiarize students with different modes of general and academic writing.
		CO2	To help them master writing techniques to meet academic and professional needs.
		CO3	To introduce them to the basics of academic presentation
		CO4	To sharpen their accuracy in writing.
SEMESTER IV			
EN 1411.1	**Language Course 8: Readings in Literature**	**CO1**	To sensitize students to the aesthetic, cultural and social aspects of literature.
		CO2	To help them analyze and appreciate literary texts.

ADDITIONAL LANGUAGES

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
HN1111.1	**Hindi Katha Sahitya**	**CO1**	Familiarize the students with the world of fiction.
		CO2	Remembers main works of the representative writers.
		CO3	Elucidates key sentences with reference to context.
		CO4	Understand how the resource language is used as a medium in creative writing .
		CO5	Analyse and evaluate the works of the fiction writers.
		CO6	Understand the craft of the fiction writers .
AR1111.1	**Functional Arabic I**	**CO1**	Developing communication skills and inculcating values of communication among the students.
		CO2	Acquiring mastery of Arabic with efficient communicative skills and expressive capabilities
		CO3	Familiarizing with situation language and situation vocabulary in the different domains of life.
		CO4	Understanding and acquiring knowledge of employing language in real life occasions.
AR1111.2	**Arabic Communication I**	**CO1**	Developing communication skills and inculcating values of communication among the students.
		CO2	Acquiring mastery of Arabic with efficient communicative skills and expressive capabilities
		CO3	Familiarizing with situation language and situation vocabulary in the different domains of life.
		CO4	Understanding and acquiring knowledge of employing language in real life occasions.

AR1111.3	**Communicative Arabic I**	**CO1**	Developing communication skills and inculcating values of communication among the students.
		CO2	Acquiring mastery of Arabic with efficient communicative skills and expressive capabilities
		CO3	Familiarizing with situation language and situation vocabulary in the different domains of life.
		CO4	Understanding and acquiring knowledge of employing language in real life occasions.
ML 1111.1	**Malayala Kavitha**	**CO1**	Introduce students to the literary spaces of Malayalam poetry.
		CO2	To develop a fundamental understanding of poetry.
ML1111.2	**Sahithya Padanam -1**	**CO1**	Introduce students to the literary spaces of Malayalam Literature.
		CO2	To develop a fundamental understanding of literature.
		CO3	Introduce student to various phases of developments in literature.
ML1111.3	**Gadyasahithyam**	**CO1**	Familiarize students with the literary aspects of Malayala Gadyasahithyam.
		CO2	To generate curiosity and an understanding of the Gadyasahithyam.
SEMESTER II			
HN 1211.1	**Hindi Nibandh Aur anya Gadya Vidhayen**	**CO1**	Understand the craft of prescribed writers.
		CO2	Understand the different forms of prose.
		CO3	Analyse the prescribed prose form in accordance with the craft .
		CO4	Recollect the main works of prescribed writers.
		CO5	Elucidate key sentences with reference to context
AR1211.1	**Functional Arabic II**	**CO1**	Developing communication skills and inculcating values of communication among the students.
		CO2	Acquiring mastery of Arabic with efficient communicative skills and expressive capabilities

		CO3	Familiarizing with situation language and situation vocabulary in the different domains of life.
		CO4	Understanding and acquiring knowledge of employing language in real life occasions.
AR1211.2	**Arabic for Communication II**	**CO1**	Developing communication skills and inculcating values of communication among the students.
		CO2	Acquiring mastery of Arabic with efficient communicative skills and expressive capabilities
		CO3	Familiarizing with situation language and situation vocabulary in the different domains of life.
		CO4	Understanding and acquiring knowledge of employing language in real life occasions.
AR1211.3	**Communicative Arabic II**	**CO1**	Developing communication skills and inculcating values of communication among the students.
		CO2	Acquiring mastery of Arabic with efficient communicative skills and expressive capabilities
		CO3	Familiarizing with situation language and situation vocabulary in the different domains of life.
		CO4	Understanding and acquiring knowledge of employing language in real life occasions.
ML 1211.1	**Gadyasahithyam**	**CO1**	Introduce students to the literary aspects of Malayala Gadyasahithyam.
		CO2	Generate curiosity and an understanding of the Gadyasahithyam
ML 1211.2	**Sahitya Padanam -2**	**CO1**	Develop deeper knowledge in the literary spaces of Malayalam Literature.
		CO2	To develop a deeper understanding of literature.
		CO3	Familiarize students with the various phases of developments in literature.
ML1211.3	**Com Eng - Drisyakalasahithyam**	**CO1**	To develop an understanding of Drisyakalasahithyam and its relevance.
SEMESTER III			

HN 1311.1	**Hindi Natak ,Vyakaran Tatha Anuvad**	**CO1**	Familiarize the students with the development of plays in Hindi.
		CO2	Translate simple passages from English to Hindi .
		CO3	Analyse and evaluate the play.
		CO4	Use Hindi language correctly by understanding grammar.
		CO5	Identifies common grammatical mistakes made while writing in Hindi.
AR1311.1	**Arabic Prose**	**CO1**	Reading & Understanding literary and general works in Arabic CO 2:Understanding basic language structures by the reading of prose literature in Arabic
		CO2	Developing literary appreciation skills by the evaluation of model literature selections.
ML 1311.1	**Bhashavabodhavum Sargatmakatayum**	**CO1**	Introduce students to the aspects of Bhashavabodhavum Sargatmakatayum.
		CO2	Familiarize students with the nature,relevance and characteristics of the study.
SEMESTER IV			
1411.1	**Hindi Kavitha evam Ekanki**	**CO1**	Understand the aesthetics of ancient and modern poetry of Hindi.
		CO2	Appreciates the creativity of poets.
		CO3	Understand the development of poetry.
		CO4	Motivate to live a meaningful life.
		CO5	These poems ,novels and stories encourage our students to work hard and to choose a right way to get success and to avoid unfair means .
AR1411.1	**Readings in Arabic Literature**	**CO1**	Sensitizing the student to the aesthetic, cultural and social aspects of literary appreciation and analysis and the socio-literary elements of Classical & Modern Arabic Literature
		CO2	Understanding the distinct features of Classical & Modern Arabic Literature
		CO3	Estimating the scope of various genres in Arabic Literature.

ML 1411.1	**Drishyakala Sahityam**	**CO1**	Introduce students to the literary aspects of Drishyakala Sahityam (Drishya Kaumudi).
		CO2	Generate curiosity and an understanding of the Drishyakala Sahityam

CORE COURSES

NAME OF THE PROGRAMME:FIRST DEGREE PROGRAM IN ENGLISH LANGUAGE AND LITERATURE

PROGRAM SPECIFIC OUTCOMES

PSO1: Realize the divergent and plural voices that come into the making of the corpus of literary studies.

PSO2 : Understand literature as one of the many arts that seeks literary expression and its close connection with other art forms like painting, music, dance, movie and so on down the ages.

PSO3 : Imbibe the importance of a multidisciplinary approach to understanding the nuances of literary expressions.

PSO4: Understand the specific socio-cultural backdrop of the formation of literary representations.

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
EN 1141	**Introduction to Literary Studies I**	**CO1**	Introduce varied literary representations.
		CO2	Familiarize students with the nature and characteristics of literature.
		CO3	Discuss the nature and characteristics of the literature
		CO4	Introduce two key genres of literature, poetry and drama.
		CO5	Possess a foundational understanding of poetry and drama.
EN 1131	**Popular Literature and Culture**	**CO1**	Encourage the student to think critically about popular literature.
		CO2	Understand the categories of the popular and the canonical.

		CO3	Identify the conventions, formulas, themes and styles of popular genres such as detective fiction, science fiction and fantasy, and children's literature.
		CO4	An assessment of the literary and cultural value of popular texts
		CO5	Sensitize students to the ways in which popular fiction reflects and engages with questions of gender, identity, ethics and education.
SEMESTER II			
EN 1241	**Introduction to Literary Studies II**	**CO1**	Cherish a taste for the literary among students
		CO2	Comprehend the nature and characteristics of different genres of literature.
		CO3	Detailed awareness of the two key genres of literature- fiction and non-fiction
		CO4	Imbibe the representational possibilities of the respective genres.
		CO5	Instill a creative and critical aptitude
EN 1231	**Art and Literary Aesthetics**	**CO1**	The student will be able to engage with literature from a broader, educated perspective.
		CO2	The student will be able to think with greater originality and independence about the complex interrelationship between different art forms.
		CO3	The student will be trained to engage sensitively and intelligently in new readings of literature.

		CO4	The course develops an understanding of the correlation between literature, film, music and painting and encourages ways of reading and seeing which deliver insights into literary texts.
		CO5	Initiate students to implement the multidisciplinary scope of art and literary studies.
SEMESTER III			
EN 1341	**British Literature I**	**CO1**	Comprehend the origins of English literature
		CO2	Understand the specific features of the particular periods
		CO3	Understand themes, structure and style adopted by early British writers
		CO4	Gain knowledge of the growth and development of British Literature in relation to the historical developments
		CO5	Understand how writers use language and creativity to capture the human experience through different literary forms
EN 1321	**Evolution of the English Language**	**CO1**	Knowledge of the paradigm shifts in the development of English.
		CO2	Well aware of the historical paradigm shifts in the history the of English Language
		CO3	Imbibe the plural socio cultural factors that went in to the shaping of the English Language.
		CO4	Place English language in a global context.
		CO5	Recognize the politics of many _Englishes‘

EN 1331	**Narratives of Resistance**	**CO1**	Be able to identify themes of resistance in different forms and genres of literature.
		CO2	Have a sense of the various kinds of injustice related to race, ethnicity, gender etc.
		CO3	Develop an idea of literature as a form of resistance to all forms of totalitarian authority.
		CO4	Understand the inter connection between various genres in manifesting resistance
		CO5	How resistance is an undeniable presence in the everyday narratives of literary and other artistic expressions.
SEMESTER IV			
EN 1441	**British Literature II**	**CO1**	Sensitize students to the changing trends in English literature in the 18th and 19th centuries and connect it with the sociocultural and political developments.
		CO2	Develop the critical thinking necessary to discern literary merit
		CO3	Be able to recognize paradigm shifts in literature
		CO4	Be able to identify techniques, themes and concerns
		CO5	Connect literature to the historical developments that shaped the English history
EN 1442	**Literature of the 20th Century**	**CO1**	Understand social, political, aesthetic and cultural transformations of early twentieth century in relation to literary texts with their specific formal features.

		CO2	Know the stylistic features of Modernism and its various literary and aesthetic movements
		CO3	Critically engage the ideas that characterise the period, especially the crisis of modernity
		CO4	Understand contemporary responses to the historical incidents that mark the period
		CO5	Understand and use critical strategies that emerged in the early twentieth century.
EN1431	**Philosophy for Literature**	**CO1**	Have a diachronic understanding of the evolution of philosophy from the time of Greek masters to 20th century.
		CO2	Have an awareness of the major schools of thought in western philosophy.
		CO3	Have a healthy epistemological foundation at undergraduate level that ensures scholarship at advanced levels of learning.
		CO4	Talk about some of the key figures in Philosophy.
		CO5	Analyze and appreciate texts critically, from different philosophical perspectives
SEMESTER V			
EN 1541	**Literature of Late 20th Century and 21st Century**	**CO1**	Identify the various socio-cultural changes that evolved in the late modernist period
		CO2	Relate to the diverse currents of postmodern literature and its reflections in the contemporary ethos

		CO3	Assimilate the inherent multiplicities and fluidity of societal perspectives
		CO4	Develop an innate sympathy for the tragedies of Holocaust and an awareness regarding the environmental impasses threatening the modern world
		CO5	Empathise with the marginalised and comprehend their predicament.
EN 1542	**Postcolonial Literatures**	**CO1**	Ability to critique colonial history
		CO2	Awareness of the socio-political contexts of colonialism and post colonialism
		CO3	Understanding of the effects of colonialism in various nations
		CO4	Knowledge of the key terms in post-colonial thought
		CO5	Study of the race and gender dynamics in postcolonial literature
EN 1543	**20th Century Malayalam Literature in Translation**	**CO1**	Generate knowledge about the varied milieu of the development and growth of Malayalam literature and be sensitive to its socio cultural and political implications.
		CO2	Get a basic knowledge of the literary and the non-literary works produced in Malayalam
		CO3	Discern the vibrancy of Malayalam literature
		CO4	Sense the distinctness of the socio-cultural arena in which Malayalam literature Is produced

		CO5	Know the value of literature produced in regional languages and key role of translation in the growth of language and literature.
EN 1544	**Linguistics and Structure of the English Language**	**CO1**	Understand the phonological and grammatical structure of English Language
		CO2	Be able to analyse actual speech in terms of the principle of linguistics
		CO3	Improve the accent and pronunciation of the language
		CO4	Introduce the students to internationally accepted forms of speech and writing in English.
		CO5	Explore the ancient linguistic tradition of India
EN 1545	**Criticism and Theory**	**CO1**	Analyze and appreciate texts critically, from different perspectives.
		CO2	Appreciate Indian Aesthetics and find linkages between Western thought and Indian critical tradition.
		CO3	Show an appreciation of the relevance and value of multidisciplinary theoretical models in literary study.
		CO4	Demonstrate an understanding of important theoretical methodologies and develop an aptitude for critical analysis of literary works.
		CO5	Gain a critical and pluralistic understanding and perspective of life

EN 1551.1	**Communicative Applications in English**	**CO1**	Learners majoring in some subject other than English will have a working knowledge of the type of English that is required in real life situations, especially the globalized workplace.
		CO2	Well trained to write clear, well-framed, polite but concise formal letters and e-mails for a variety of purposes
		CO3	Acquire some of the soft-skills that go hand in hand with English –namely, the ability to prepare for an interview and face it confidently, the ability to participate boldly a group discussion and contribute meaningfully to it, the ability to make a simple and interesting presentation of 5-10 minutes before a mixed audience on anything that they have learnt in the previous semesters of the UG programme
SEMESTER V I			
EN 1641	**Gender Studies**	**CO1**	Recognize the patriarchal bias in the formation of history and knowledge.
		CO2	Analyse the ways in which gender, race, ethnicity class, caste and sexuality construct the social, cultural and biological experience of both men and women in all societies.
		CO3	Recognize and use the major theoretical frames of analysis in gender studies
		CO4	Interrogate the social constructions of gender and the limiting of the same in to the male-female binary in its intersections with culture, power, sexualities and nationalities

		CO5	Examine gender issues in relation to the sustainable goals of development.
EN 1642	**Indian Writing in English**	**CO1**	Make students aware of different aspects of colonization like cultural colonization.
		CO2	Trace the historical and literary genesis and development of Indian Writing in English
		CO3	Acquaint them with the major movements in Indian Writing in English across varied period and genres
		CO4	Address the plurality of literary and socio-cultural representations within Indian life as well as letters.
		CO5	Enhance the literary and linguistic competence of students by making them aware of how language works through literature written in the subcontinent
EN 1643	**Film Studies**	**CO1**	Recognize the language of films and use it creatively.
		CO2	Analyze films from both technical and non-technical perspectives
		CO3	Engage questions of social justice and gender justice by critiquing representations of culture.
		CO4	Use film as a medium of communication
		CO5	Derive an interest in various careers related to film

EN 1644	**World Classics**	**CO1**	Understand the study of Classics as a means of discovery and enquiry into the formations of great literary works and how the rich imagery of these classical works continues beyond the twentieth century.
		CO2	Recognize the diversity of cultures and the commonalities of human experience reflected in the literature of the world.
		CO3	Imbibe a fair knowledge in the various Classical works from different parts of the world, at different time periods, across cultures.
		CO4	Examine oneself and one's culture through multiple frames of reference, including the perception of others from around the world.
		CO5	Develop and aesthetic sense to appreciate and understand the various literary works with a strong foundation in the World Classics.
EN 1661.3	**Creative Writing**	**CO1**	Create a body of original creative works which exhibit basic elements of literary writing.
		CO2	Generate the ability to apply the creative as well as critical approaches to the reading and writing of literary genres.
		CO3	Critique and support the creative writing of peers in a guided workshop environment.
		CO4	Engage in literary output by identifying, analyzing and expressing socially sensitive and personally abstract themes and ideas.

		CO5	Gain expertize in providing critical readings of works of literary expressions.

NAME OF THE PROGRAMME:FIRST DEGREE PROGRAM IN COMMUNICATIVE ENGLISH & LITERATURE

PROGRAM SPECIFIC OUTCOMES

PSO1 Realize the divergent and plural voices that come into the making of the corpus of literary studies.

PSO2 Understand literature as one of the many arts that seeks literary expression and its close connection with other art forms like painting, music, dance, movie and so on down the ages.

PSO3 Imbibe the importance of a multidisciplinary approach to understanding the nuances of literary expressions.

PSO4 Understand the specific socio-cultural backdrop of the formation of literary representations.

COURSE OUTCOME (CO)

PAPER CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
EN 1141	**READING POETRY**	**CO1**	To sensitize students to the language, forms and types of poetry.
		CO2	To make them aware of the diverse poetic devices and strategies.
		CO3	To help them read, analyse and appreciate poetry.
		CO4	To enhance the level of literary and aesthetic experience and to help them respond creatively
CG 1131	**HISTORY OF ENGLISH LITERATURE**	**CO1**	To give an understanding of the history of literature

SEMESTER II			
EN 1241	**READING DRAMA**	**CO1**	To enable the students to read, analyse and appreciate drama
		CO2	To sensitize them to the verbal and visual language of drama
		CO3	To help them watch, write about, and perform plays
CG 1231	**HISTORY OF ENGLISH LITERATURE – II**	**CO1**	To give an understanding of the history of literature
SEMESTER III			
CG 1341	**READING FICTION**	**CO1**	To make students aware of the diverse fictional forms in prose.
		CO2	To enable them to analyse and appreciate various fictional writings.
		CO3	To give them an insight into other cultures.
		CO4	To help them think and write imaginatively
CG 1342	**20th CENTURY MALAYALAM LITERATURE IN ENGLISH TRANSLATION**	**CO1**	To introduce the students to the richness of twentieth century Malayalam writing
		CO2	To provide the students a basic understanding of twentieth century Malayalam Writing
		CO3	To introduce to them some of the major twentieth century Malayalam writers
		CO4	To help them analyse and appreciate twentieth century Malayalam literature.
CG 1331	**HISTORY OF ENGLISH LITERATURE – III**	**CO1**	To give an understanding of the history of literature
SEMESTER IV			
EN 1441	**READING PROSE**	**CO1**	To help students understand and appreciate different types of prose writing.
		CO2	To introduce to them the basics concepts of style and literary devices in prose.
		CO3	To acquaint them with cultural diversity and divergence in perspectives.

		CO4	To enable them to write creatively and critically.
EN 1421	**INFORMATICS**	**CO1**	To update and expand basic informatics skill and attitudes relevant to the emerging knowledge society
		CO2	To equip students to utilize the digital knowledge resources effectively for their chosen fields of study
CG 1431	**HISTORY OF ENGLISH LANGUAGE**	**CO1**	To familiarize students with the origin and development of the English Language
		CO2	To make them aware of the changes in different areas of the language

NAME OF THE PROGRAMME:FIRST DEGREE PROGRAM IN MALAYALAM

PROGRAM SPECIFIC OUTCOMES

PSO 1. Gaininga basic understanding of various fields of Malayalam language, culture and literature, different stages of growth of literature.

PSO 2. Form new ideas and perspectives through attitudes, thinking, investigative reading, and review of critique literary works.

PSO 3. Growth of interest in research in the fields of literary theory, literary criticism,

and literaryhistoriography.

PSO 4. Gaining knowledge about the academic status of Malayalam language.

PSO 5. Strengthening understanding and application of language and vocabulary.

PSO6. Gaining confidence to form original thinking and worldview.

PSO 7. Acquiring ability to participate in cultural forums and debates.

PSO 8. Achieving capacity to participate in competitive examinations including National Level Civil Services Examinations.

COURSE OUTCOME (CO)

PAPER CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
ML1141	**Novel Sahithyam**	**CO1**	Introduce students to the world of Novel literature.
		CO2	Introduce the key Novelists and their contributions.
		CO3	Possess a foundational understanding of poetry and Novel.
ML 1131.1	**Kerala Padanam-1**	**CO1**	Introduce students to Kerala literary aspects.
		CO2	Familiarize students with the nature,relevance and characteristics of the study.
		CO3	Develop an understanding of the various eras of Kerala history and culture.
SK1131.2	**Sanskrit -1**	**CO1**	Introduce students to the world of Sanskritham.

		CO2	Introduce varied literary representations.
SEMESTER II			
ML 1241	**Nadakam Sahithyam**	**CO1**	Introduce students to the world of Drama literature.
		CO2	Introduce the key figures in the Drama literature and their contributions.
ML 1231.1	**Kerala Padanam -2**	**CO1**	Develop deeper knowledge in the Kerala literary aspects.
		CO2	In-depth knowledge to the nature,relevance and characteristics of the study.
		CO3	Significance of the literary works in shaping the Kerala history and culture.
SK 1231.2	**Sanskrit-2**	**CO1**	Develop deeper knowledge to the world of Sanskritham.
SEMESTER III			
ML 1321	**Foundation Course-II(Informatics)- Vivara Sanketikavidyayum Malayalam Bhasha Padanavum**	**CO1**	Introduce students to the connections between and the relevance of Information Technology in Malayalam Bhasha Padanavum.
		CO2	Familiarize students with the latest trends in Malaylam language.
ML 1331	**Paristhithi Padanam**	**CO1**	To develop an understanding of environmental studies.
SK 1331.2	**Sanskrit-3**	**CO1**	Develop core and in-depth knowledge of Sanskritham.

ML 1341	**Sahithyameemamsa: Pourasthyavum Paschathyavum**	**CO1**	Introduce students to literary spaces of Sahithyameemamsa.
		CO2	To generate curiosity for making a comparative study of the Pourasthya and Paschathya literature.
SEMESTER IV			
ML 1441	**Aadhunika Malayala Kavitha**	**CO1**	To develop an understanding of Modern Malayalam Poetry.
ML 1442	**Niroopana Sahithya**	**CO1**	Familiarize students withMalayalam Critical Studies.
ML-1431	**Dalit Sahityam, Streevada Sahityam**	**CO1**	To develop an understanding of the Dalit Sahityam and Streevada Sahityam in Malayalam literature.
SK 1431.2	**Sanskrit-4**	**CO1**	To strengthen the in-depth knowledge of Sanskritham.

SEMESTER V			
ML1541	**Bhashasastram**	**CO1**	To familiarize students with Bhashasastram.
ML1542	**Cherukadha padanam**	**CO2**	To develop an understanding of Cherukadhapadanam
ML1543	**Vivarthanam: Sidhanthavum Prayogavum**	**CO1**	To familiarize students with Vivarthana Sahityam.
		CO2	To develop an understanding of its applications.
ML1544	**Jeevacharithram, Aathmakadha,Yathra Sahityam**	**C01**	To develop an understanding Of Jeevacharithram, Aathmakadha,Yathra Sahityam.
ML1545	**Malayala Bhasha Sahitya Charithram-1**	**CO1**	To develop an understanding of Malayala Bhasha Sahitya Charithram.
		CO2	To familiarize students with the various stages of developments in the literature.
ML 1551.3	**Open Course -1 Chalachitra Padanam**	**CO1**	To develop an understanding of Chalachitra Padanam.
		CO2	To understand Various aspects of film and media.
SEMESTER VI			
ML 1641	Malayalam Bhasha Sahitya Charitram-2	CO1	To develop a deeper understanding ofMalayala Bhasha Sahitya Charithram.
		CO2	To generate curiosity among student for learning more about the literature and familiarize them with the key contributors to the field.

ML 1642	**MalayalaVyakaranam**	**CO1**	Understand the phonological and grammatical structure of Malayalam Language
		CO2	To analyze actual speech in terms of the principle of linguistics
		CO3	Introduce the students to various forms of speech and writing in Malayalam.
		CO4	Explore the linguistic variations of Malayalam language
ML 1643	**Aadhunika Poorva Malayala Kavitha**	**CO1**	To familiarize students with Aadhunika Poorva Malayala Kavitha.
ML 1644	**Nattarivu Padanam**	**CO1**	To develop an understanding ofNattarivu Padanam.
ML 1651.1	**Elective- Tharatamya Sahityam**	**CO1**	To familiarize students with the Tharatamya Sahityam.
		CO2	To develop an understanding of the various stages of developments in the literature.
ML 1645	**Desertation or Project**	**CO1**	To familiarize students with processes of dissertation or Project work.
		CO2	Equip students to conduct dissertation or Project work.

NAME OF THE PROGRAMME:FIRST DEGREE PROGRAM IN ARABIC LANGUAGE AND LITERATURE

PROGRAM SPECIFIC OUTCOMES

PSO1. Introducing the learners to the lingua franca of the Arab countries and also to equip them to acquire basic skills in professional and functional Arabic.

PSO 2. Equipping the learners to seek employment in several new fields, in India and Gulf-Arab countries, which demands knowledge in functional Arabic

PSO 3. Developing communication skills and inculcating values of communication among students.

PSO 4. Equipping the students to handle Arabic language in Real life situations with working knowledge in different walks of life

PSO 5. Understanding the colloquial usages of Modern Arabic prevalent in Major Arab countries

PSO 6. Perfecting the mastery of Arabic language with sufficient knowledge in applied grammar

PSO 7. Acquiring proficiency in professional translation & business Arabic Reading & Understanding literary and general works in Arabic

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
AR1141	**Grammar & Morphology I**	**CO1**	Moulding the students to identify and analyze the basic sentence patterns and grammar of Arabic language.
		CO2	Assimilating the four basic language skills in students - Listening, Speaking, reading and Writing.

		CO3	Enabling to distinguish and apprehend the meaning of grammatical structures in spoken and written form.
		CO4	Using Arabic effectively for study purpose across the curriculum.
		CO5	Making students use grammatical terminology precisely for effective analyses of sentence structures within Arabic texts.
		CO6	Getting acquaintance with the rules of word formation.
AR1131	**Ancient History of Arabs**	**CO1**	Exploring the historical background and progress of Islam from the period of ignorance to the demise of the Prophet Muhammad (pbuh) and how the Islamic culture and civilization affected the history and destiny of the Arabs.
		CO2	Getting an introduction to Islamic History and its culture
		CO3	Understanding the cultural and historical background of Islam in the medieval history of mankind
		CO4	Evaluating the course and development of Islam during the life time of the Prophet.
AR1132	**Basic Translation**	**CO1**	Helping the students to update and expand basic secretarial and translation skills and attitudes relevant to the application of Arabic in the commercial and correspondence field.
		CO2	Expanding translation and correspondence skills related to various business areas
		CO3	Familiarizing with technical language and commercial vocabulary in the different domains
		CO4	Acquiring essential mastery in technical Arabic.
	SEMESTER II		
AR1241	**Grammar & Morphology II**	**CO1**	Moulding the students to identify and analyze the basic sentence patterns and grammar of Arabic

		CO2	language to apply it in real communication contexts effectively and accurately.
		CO3	Assimilating the four basic language skills in students - Listening. Speaking, reading and Writing.
		CO4	Enabling to distinguish and apprehend the meaning of grammatical structures in spoken andwritten form.
		CO5	Makingstudents use grammatical terminology precisely for effective analyses of sentence structures within Arabic texts.
		CO6	Getting acquaintance with the rules of word formation
AR1231	**Medieval History of Arabs**	**CO1**	Exploring the historical background and progress of Islam from the period of the pious Caliphs tothe reign of Abbasids and how the Arab- Muslim culture and civilization affected the history anddestiny of the Mankind.
		CO2	Getting an introduction to Islamic History and its culture
		CO3	Understanding the cultural and historical background of Islam in the medieval history of mankind
		CO4	Evaluating the course and development of Islam during the life time of the Prophet.
		CO5	Assessing the course of Islam and Muslim rule during the periods of the pious Califs, the Umayyads and the Abbasids.
		CO6	Studying how the medieval Arabs contributed to the development of human knowledge andscience in the Middle Ages
AR1232	**Advanced Translation**	**CO1**	Helping the students to update and expand advanced translation skills and attitudes relevant to theapplication of Arabic in the commercial fields.
		CO2	Expanding translation skills related to various business areas Familiarizing with technical language and commercial vocabulary in the different domains

		CO3	Acquiring essential mastery in technical Arabic
SEMESTER III			
AR1321	**Arabic Rhetoric**	**CO1**	Sensitizing the students to the theories of rhetoric in Arabic literary heritage
		CO2	Preparing the students for a rhetoric approach of literary appreciation and evaluation
		CO3	Understanding the concepts of Arabic rhetoric and poetics
		CO4	Understanding how to use the rhetoric techniques in literature Familiarizing with the difference between literary texts and other pieces of scientific texts
AR1341	**Elementary Arabic I**	**CO1**	Imparting the language skills by helping the students to use Arabic as medium of expression
		CO2	Perfecting the mastery of language with efficient communicative skills
		CO3	Acquiring advanced vocabulary and language structure
		CO4	Using Arabic as a communication medium.
AR1331	**Modern History of Arabs**	**CO1**	Exploring the historical background and progress of Islam during the Middle Ages and explore thehistory and evolution of the modern Muslim world.
		CO2	Getting an introduction to Islamic History and its culture
		CO3	Understanding the cultural and historical background of Islam in the medieval history of mankind
		CO4	Evaluating the course and development of Islam Muslim rule in Spain and Medieval world and its effect on the political history of the world
		CO5	Understanding the history and challenges of Modern Arab-Muslim world with special reference toIndia and Kerala

		CO6	Studying how the medieval Arabs contributed to the development of human knowledge and science in the Middle Ages
AR1332	**Indian Arabic Literature**	**CO1**	Introducing the students to the world of Indo-Arabic literature and to identify the commonness in the works of Arab literary personalities and Indian writers in Arabic Tracing the development of Indo-Arabic literatureGetting an analytical knowledge of Arabic writing in India
		CO2	Finding out the differences and commonness between Middle East literature and Indian Arabic
		CO3	literature Studying how Arabic literature was acted as a medium of resistance against European colonialism in Medieval Malabar
	SEMESTER IV		
AR1441	**Elementary Arabic II**	**CO1**	Imparting the language skills by helping the students to use Arabic as medium of expression
		CO2	Perfecting the mastery of language with efficient communicative skills
		CO3	Acquiring advanced vocabulary and language structure
AR1442	**History of Classical Literature**	**CO1**	Sensitizing the student to the aesthetic, cultural and social aspects of literary appreciation and analysis
		CO2	Understanding the unbroken literary tradition in Arabic
		CO3	Getting an analytical and in depth knowledge of the literary creations, authors, trends, etc.
		CO4	Focusing on the relation between literature and Bedouin life in Arabia
		CO5	Studying the approach of religion to arts and literature
AR1431	**Classical Arabic Prose**	**CO1**	Sensitizing the student to the aesthetic, cultural and social aspects of literary

			appreciation and analysis and the socio-literary elements of Classical Arabic prose literature
		CO2	Understanding the distinct features of Jahiliyya and Islamic prose literature
		CO3	Estimating the scope of various genres of classical Arabic prose Studying the relation between literature and Bedouin life in Arabia
		CO4	Appreciating the influence of Islam in the Arabic prose literature
AR1432	**Classical Arabic Poetry**	**CO1**	Sensitizing the student to the aesthetic, cultural and social aspects of literary appreciation and analysis and the socio-literary elements of Classical Arabic Poetry
		CO2	Understanding the distinct features of Jahiliyya and Islamic Poetry Estimating the scope of various genres of classical Arabic Poetry
		CO3	Studying the relation between literature and Bedouin life in Arabia
		CO4	Appreciating the influence of Islam in the Arabic Poetry
	SEMESTER V		
AR1551	**A Package in Gulf Arabic (Open Course I)**	**CO1**	Introducing the learners to the lingua franca of the Arab countries and also to equip them to acquire basic skills in professional and functional Arabic.
		CO2	Equipping the learners to seek employment in several new fields, in India and Gulf-Arab countries which demands knowledge in functional Arabic
		CO3	Understanding the elementary components of Arabic
		CO4	Acquiring basic working knowledge in Communicative Arabic
		CO5	Using Arabic as a functional language by developing written, oral and translation skills.CO

		CO6	Understanding the colloquial usages of Modern Arabic prevalent in Major Arab countries
		CO7	Acquiring a practical knowledge in functional Arabic required for the fields of Travel, Tourism, Hospitality Management. Advertisement, Health, Export and Journalism.
AR1541	**Reading classical Arabic Prose**	**CO1**	Sensitizing the student to the aesthetic, cultural and social aspects of literary appreciation and analysis and the socio-literary elements of Classical Arabic prose literature
		CO2	Understanding the distinct features of Jahiliyya and Islamic prose literature
		CO3	Estimating the scope of various genres of classical Arabic prose Studying the relation between literature and Bedouin life in Arabia
		CO4	Appreciating the influence of Islam in the Arabic prose literature
AR1542	**Reading Classical Arabic Poetry**	**CO1**	Sensitizing the student to the aesthetic, cultural and social aspects of literary appreciation and analysis and the socio-literary elements of Classical Arabic Poetry
		CO2	Understanding the distinct features of Jahiliyya and Islamic Poetry Estimating the scope of various genres of classical Arabic Poetry
		CO3	Studying the relation between literature and Bedouin life in Arabia
		CO4	Appreciating the influence of Islam in the Arabic Poetry
AR1543	**Rhetoric & poetics**	**CO1**	Sensitizing the students to the theories of rhetoric in Arabic literary heritage
		CO2	Preparing the students for a rhetoric approach of literary appreciation and evaluation
		CO3	Understanding the concepts of Arabic rhetoric and poetics
		CO4	Understanding how to use the rhetoric techniques in literature Familiarizing with the difference between literary texts and other pieces of scientific texts

AR1544	**Literature in Arabic 750-1800 AD**	**CO1**	Introducing the students to the aesthetic, cultural and social spheres of Medieval Arabic literary heritage and the influence of politics, religion and culture in Arabic literature
		CO2	Understanding the distinct features of Abbasid and Turkish literature in Arabic
		CO3	Estimating the scope of various genres of medieval Arabic prose and poetry. Studying the relation between literature and other socio-cultural elements
		CO4	Appreciating the influence of Islam and politics in the Medieval Arabic literature
AR1545	**Reading Medivel Arabic prose and poetry**	**CO1**	Sensitizing the student to the aesthetic, cultural and social aspects of literary appreciation and analysis and the socio literary elements of Medieval Arabic literature
		CO2	Understanding the distinct features of Abbasi, Mamluki, Ottoman and Spanish Arabic literature
		CO3	Estimating the scope of various genres of Medieval Arabic prose and poetry Studying the relation between literature and geographical and socio-cultural elements in the great
		CO4	Appreciating the influence of medieval Muslim politics in the Arabic literature
	SEMESTER VI		
AR1641	**Literature in Arabic 19th and 20th centuries**	**CO1**	Following up the development of new literature in Arabic from the beginning of European invasion into the Arab world in 19th and 20th centuries Understanding the distinct features of Modern literature in Arabic
		CO2	Introducing new literary schools and trends in Arabic literature Estimating the scope of various genres of Contemporary Arabic prose and poetry.
		CO3	Assessing the influence of western literature and culture in the Arabic literature
		CO4	Tracing the development of modern Arabic literature in various Arab regions

AR1642	**Reading Modern Arabic Prose & Poetry**	**CO1**	Introducing the student to the world of various literary genres of modern Arabic literary output and sensitizing them to the aesthetic, western and traditional aspects of literary appreciation and analysis
		CO2	Assessing the difference between literary prose and artistic prose in modern Arabic
		CO3	Introducing the student to the world of various literary genres of modern Arabic literary output and sensitizing them to the aesthetic, western and traditional aspects of literary appreciation and Analysis
		CO4	Introducing the student to the world of various literary genres of modern Arabic literary output and sensitizing them to the aesthetic, western and traditional aspects of literary appreciation and Analysis
		CO5	**CO5:**Appreciating the influence of western literature in Arabic literary personalities
		CO6	Understanding the characteristics of modern literature in Arabic
AR1643	**Narrative Literature**	**CO1**	Guiding the students to the world of Arabic narrative heritage by providing a reading list of narrative literature
		CO2	Assessing the basic differences between traditional narration and modern short story
		CO3	Estimating the scope of narrative in modem Arabic literature
		CO4	Understanding the distinct features of Arabic narrative literature
AR1644	**Drama & Fiction**	**CO1**	Guiding the students to the world of Arabic fiction by providing a reading list of Arabic fiction and Drama.
		CO2	Appreciating and analysising the fictional elements in literature

		CO3	Assessing the basic differences between traditional narration and modern fiction
		CO4	Estimating the scope of fiction and drama in modern Arabic literature
		CO5	Understanding the distinct features of Arabic Drama and fiction
AR1651	**Informatics in Arabic II**	**CO1**	Updating and expanding basic informatics skills and attitudes relevant to the emerging knowledge society
		CO2	Equipping the students effectively utilize the digital knowledge resources for their chosen of study.
		CO3	Reviewing the basic concepts and functional knowledge in the field of informatics
		CO4	Creating awareness about nature of the emerging digital knowledge society
		CO5	Creating awareness about social issues and concern in the use of digital technology
		CO6	Imparting skills to enable students to use digital knowledge resources in Arabic Giving theoretical and practical experience in Arabic computing
AR1645	**Project/Dissertation**	**CO1**	Ensuring that the student can apply and supplement what he learnt in the class rooms and outsideto real life situations, occasions, efforts and problem solving.
		CO2	Ensuring that the student can apply his knowledge to situations and problem solving • Estimating the student domains of application, analysis, synthesis, evaluation, critical thinking
		CO3	Evaluating the effectiveness of course contents learnt throughout the programme

NAME OF THE PROGRAMME:FIRST DEGREE PROGRAM IN HISTORY

PROGRAM SPECIFIC OUTCOMES

PSO1	Students become familiar with the political processes and structures; society, economy, and culture; political Ideas and institutions of past and historical thought and historiography evolved in both Indian and global contexts.
PSO2	To understand the methodologies and approaches used by modern historians, or the ways in which history has been written in the past, and to acquire the required knowledge, awareness, and skills for historical research.
PSO3	To understand events, concepts, ideologies, and hegemonic relationships that evolved historically and to critically approach and introspect the unconsciously assumed power relations and identities.
PSO4	To understand the elements of the transition of the world from premodern to modern and to realize how this transition happened and how far it changed the world.
PSO5	By analyzing the relationship between the past and the present, students will be able to comprehend the social, cultural, and administrative processes in pre-modern Kerala
PSO6	Students will also be able to gather ideas on different regional powers and the socio-economic and cultural aspects of South India.
PSO7	To apprehend the roots of colonialism and capitalism and to analyze the impact of colonial rule
PSO8	To understand the process of nation-making and to visualize the ideological underpinnings behind the national movement
PSO9	To understand the socio-economic development in post-independent India and to conceive the notion of a secular and democratic form of India
PSO10	To realize the prospects of career-related courses and to assist students with educational and career planning

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	**COURSE OUTCOME**
SEMESTER I		

HY 1141	**Methodology and Perspectives of Social Sciences**	**CO1**	**To understand the myriad disciplines of Social Sciences with particular reference to History and its methodology.**
		CO2	**To understand the autonomy of the discipline of history and the pure- multi-character of the discipline**
		CO3	**To apply different theories in understanding the past.**
		CO4	**To analyze and evaluate the historical process in relation to power relations of the society**
		CO5	**To Evaluate the methodology and objectivity of the discipline of history.**
SEMESTER II			
HY 1241	**Cultural Formation of the Pre-Modern World**	**CO1**	To understand the theoretical and ideological background evolution of the world and human origin
		CO2	To understand the social evolutions of the early world
		CO3	To analyze the process of cultural formations of the early world
		CO4	To evaluate the genesis and growth of state and society early world
SEMESTER III			
HY 1341	**Evolution of the early Indian society &Culture**	**CO1**	Locate major pre-historic settlements and the evolution of early farming communities
		CO2	Examine the evolution of Varna and Jati-based social structure in Early India.
		CO3	Critique the social base of heterodox religions of the 6th Century BCE and its influence on power relations.

		CO4	Appraise the cultural achievements of the Guptas
HY1321	**Informatics**	**CO1**	To understand information technology for the use of learning purposes
		CO2	To familiarize new trends in historical studies
		CO3	Locate new kinds of data analyses, knowledge skill
		CO4	To understand INFLIBNET, JSTOR, and other various sites
SEMESTER IV			
HY 1441	**Medieval India: Socio-Cultural Processes**	**CO1**	To get an overview of the political, cultural, social, and economic life in Medieval India
		CO2	To focus on the regional cultures during the period.
		CO3	To appraise the linkage effect of the Medieval Period in subsequent centuries
		CO4	Interpret the social cultural and administrative features during the Medieval Period
HY 1442	**History Modern World – Part 1**	**CO1**	To understand the theoretical and ideological background of transformation towards the modern world
		CO2	To understand the socio-economic, cultural, and political intrusions of the process of the modern world
		CO3	To analyze the process and global impacts of revolutions

		CO4	To evaluate the genesis and growth of new nationalism and its aftermath
SEMESTER V			
HY 1541	**Major trends in Historical thoughts and writings**	**CO1**	To understand the myriad forms of representing the past and differentiating history from the other forms of representation of past
		CO2	To analyze the genesis and development of historical thought and writing in different times and spaces or societies.
		CO3	To analyze the philosophical foundations of the discipline of history and its changing nature in accordance with time and space.
		CO4	To evaluate the types of historical literature.
HY 1542	**Colonialism and Resistance Movements in India**	**CO1**	To understand the theoretical and ideological background of colonialism and capitalism
		CO2	To understand the socio-economic and cultural impingement of colonial intervention
		CO3	To analyze the process of colonizing India against the backdrop of theoretical insights
		CO4	To evaluate the genesis and growth of critical intervention of the colonial subjects towards the British Raj

HY 1543	**History of Modern World – Part II**	**CO1**	To understand the theoretical and ideological background of dictatorships
		CO2	To understand the process of World War II
		CO3	To analyze the post-war developments in the world
		CO4	To critically evaluate the role of India in the post-war world
HY 1544	**History of Pre modern Kerala**	**CO1**	To understand the historical and cultural evolution through the sources of Kerala history
		CO2	To understand the geographical feature and uniqueness of Kerala
		CO3	To evaluate the concept of cultural symbiosis and its impact on the material culture and society of Kerala
		CO4	To understand and evaluate the significance of the social reform movements in Kerala
HY 1545	**Making of Indian Nation**	**CO1**	CO1 To understand the theoretical perceptions of nation and nationalism
		CO2	CO2 To evaluate the making process of the nation in India
		CO3	CO3 To analyze the ideological underpinnings behind the construction of the nation in India on the backdrop of theoretical insights
		CO4	To account a sound knowledge about changes that took place among the historians regarding the notion of a national movement in India
HY 1551.2	**History of the Human Rights Movement**	**CO1**	To understand the constitutional remedies of human rights violations

		CO2	Familiarize the various agencies constituted to protect Human Rights
		CO3	To analyze the ideological foundations of the Human Right Movement
		CO4	To evaluate the process of the historical development of human rights in History
SEMESTER VI			
HY1641	**Making of a Modern Kerala**	**CO1**	To analyze the changing nature of the Socio, political and economic structure of Kerala against the backdrop of Colonial Modernity.
		CO2	To evaluate the process of socio-cultural symbiosis and the negotiations and contestations of myriad social categories
		CO3	To evaluate the process of democratization of Kerala society and polity.
		CO4	To critically understand the Kerala Model Experience
HY 1642	**Major trends in Indian Historical thought & writings**	**CO1**	To understand the myriad developments in the historical thoughts and writings in India from the ancient to the modern sphere
		CO2	To analyze the colonial roots of Indian Historiography and evaluate the multiple Indian responses to it.
		CO3	To evaluate the critical responses from the subaltern and Women's history approaches.

		CO4	To evaluate the Total History approach and post-modern turn in historical thinking and writing
HY 1643	**Contemporary India**	**CO1**	To understand the process of national integration
		CO2	To understand making process of the constitution
		CO3	To analyze the political and economic changes in the post-independent India
		CO4	To account for the problems and issues in post-independent India
HY 1644	**Twentieth Century Revolutions**	**CO1**	To understand the theoretical and ideological background of socialist revolutions and their impact on the twentieth-century world
		CO2	To evaluate the socialist expansions through the revolutions
		CO3	To contextualize and conceptualize the Twentieth-century revolutions
		CO4	To analyze the socialist ideology and its expansion into the Global context

NAME OF THE PROGRAMME:COMPLEMENTARY COURSE IN HISTORY FOR FIRST DEGREE PROGRAM IN POLITICS

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
HY 1131.2	**History of the Modern World**	**CO1**	To understand the theoretical and ideological background of revolution and its impact
		CO2	To understand the political, and socio-economic, changes of the 19th-century world
		CO3	To analyze the process of economic revolutions
		CO4	To evaluate the new trends and ideas
SEMESTER II			
HY1231.4	**History of Modern World (1901-1920)**	**CO1**	To understand stages of colonialism and colonial expansions
		CO2	To understand the political outcome of World War I
		CO3	To analyze the process of socialist revolution in Russia
		CO4	To critically evaluate the socialist policies after the revolution
SEMESTER III			
HY 1331.6	**History of Modern World (1921-1945)**	**CO1**	To understand the theoretical and ideological background of dictatorships
		CO2	To understand the process of World War II
		CO3	To analyze the post-war developments in the world
		CO4	To critically evaluate the role of India in the post-war world
SEMESTER IV			
HY 1431.8	**History of the Modern World (After 1946)**	**CO1**	To understand the theoretical and ideological concepts of –colonialism

		CO2	To understand the growth and role of third worlds
		CO3	To analyze the process and functions of post-world war organizations
		CO4	To critically evaluate and debate the contemporary issues of the world

NAME OF THE PROGRAMME:COMPLEMENTARY COURSE IN HISTORY FOR FIRST DEGREE PROGRAM IN ECONOMICS

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	**COURSE OUTCOME**	
SEMESTER I			
HY 1131.1	**History of Modern India**	**CO1**	To understand the theoretical perceptions of colonialism to imperialism
		CO2	To evaluate the socio-cultural roots of colonialism
		CO3	To analyze the ideological and historical backdrop of the social reform movements and its reactions to the process of making a nation
		CO4	To account for a theoretical insight into the national movement
SEMESTER II			
HY 1231.1	**History of Modern India (1901-1920)**	**CO1**	To understand the theoretical perceptions of nation and nationalism

		CO2	To evaluate the economic impacts of the British Raj
		CO3	To analyze the ideological underpinnings behind the construction of the nation in India in the milieu of theoretical insights
		CO4	To account for a historiographical insight into Gandhian ideology
SEMESTER III			
HY 1331.5	**History of Modern India(1921-1947)**	**CO1**	To understand the historical roots of a national movement
		CO2	To evaluate the various social class role in the national movement
		CO3	To analyze the theoretical perceptions ofa national movement
		CO4	To account for the making process of the nation in India
SEMESTER IV			
HY 1431.7	**History of Modern India (After 1948)**	**CO1**	To understand the process of national integration
		CO2	To understand making process of the constitution
		CO3	To analyze the political and economic changes in the post-independent India
		CO4	To account for the problems and issues in post-independent India

NAME OF THE PROGRAMME:FIRST DEGREE PROGRAM IN POLITICS

PROGRAM SPECIFIC OUTCOMES

PSO1: Critical Thinking: Acquire, condense and critically evaluate scholarly arguments, the assumptions behind them, and their theoretical and empirical components.

PSO2: Problem Solving: Acquire the ability to define a problem, generate alternate solution, evaluate and select an alternative and implement follow up on the solution.

PSO3: Social Interaction: Social engagement creates a sense of belonging by encouraging connections between people. This peer-to-peer connection also creates a sense of working together to achieve common goals.

PSO4: Effective Citizenship: Learn to participate in nation building by adhering to the principles of sovereignty of the nation, socialism, secularism, democracy. Learners understand and respect diversity and difference, devoid of any prejudice by gender, age, caste, religion or nationality. Develop and practice gender sensitive attitudes, environmental awareness, and empathetic social awareness about various kinds of marginalisation and the ability to understand and resist various kinds of discriminations.

PSO5 :Environment and sustainability: Acquire an understanding of the concept of sustainable development, and to preserve non-renewable cultural resources through policy, law and public education.

PSO6 : Analytical Thinking: Preparation of project is an inseparable part of UG Programme. Students have to collect sources and analyse the data to draw conclusions. The qualitative and quantitative and analytical skills are enhanced.

PSO7 : Ethics: Understand different value systems including one's own, as also the moral dimensions of actions, and accept responsibility for it.

PSO8: Effective Communication: Listen, read, comprehend, speak and write clearly and effectively in person and through electronic media in English/regional language/language of the discipline and exhibit sound domain knowledge including theories, concepts and terminologies.

PSO9 : Self-directed and Life-long Learning: Acquire the ability to engage in independent and lifelong learning in the broadest context of socio- technological changes. Integrate academic knowledge with practical skills and transfer such knowledge/skills to other domains of one's life and work.

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
PS 1141	**Core I -Methodology and Perspectives of Social sciences**	**CO1**	To understand the nature and relevance of Social and Political Sciences.
		CO2	To impart basic knowledge in the application of scientific method in social sciences and its limitations
		CO3	To enable the students in placing political science in the wider domains of social sciences and their interrelations.
		CO4	To familiarise Students with emerging terrains of political science and its critical evaluation
SEMESTER II			
PS 1241	**Core II-Introduction to Political Theory**	**CO1**	To understand the nature and social significance ofpolitical theory.

		CO2	To impart basic knowledge about various approaches to the study of Political theory.
		CO3	To enable the students in the application of various theories and concepts of Political Theory
		CO4	To critically evaluate the different perspectives of key concepts of political theory
SEMESTER III			
PS-1321	**Foundation Course II - Cyber Politics**	**CO1**	To develop conceptual understanding on cyber politics
		CO2	To understand the role of cyber space in deepening democracy
		CO3	To evaluate the role of state in governing cyber space
		CO4	To Analyse the impact of information revolution on the state-citizen interference
PS 1341	**Core III-Indian Constitution**	**CO1**	To develop conceptual understanding on the features of Indian constitution
		CO2	To analyse the importance of Preamble of Indian Constitution
		CO3	To evaluate the Political structure-both constitutional and administrative
		CO4	To evaluate the rights and privileges granted by the Constitution

SEMESTER IV			
PS 1441	**Dynamics of Indian Politics**	**CO1**	Understand the peculiar features of Indian federal system and nature of Centre-state relations
		CO2	Critically examine the tendency of regionalism and secessionism in India
		CO3	Understand and evaluate emerging trends in Indian Democracy
		CO4	Critically analyse the major factors which pose threat to Indian Democracy and political System
PS 1442	**Introduction to Comparative Politics**	**CO1**	To understand theoretical evolution and approaches to the study of Comparative Politics
		CO2	To understand the features of the various constitutions in the world
		CO3	To analyze comparative way of the political developments across the world.
		CO4	To compare the features of executive and legislature of various countries in the world
SEMESTER V			
PS 1541	**Public Administrations**	**CO1**	Converse with meaning and nature of Public Administration and familiar with different approaches in public administration
		CO2	Understand critically various principles of organisations and the role of Chief Executive and independent Regulatory Commissions

		CO3	Comprehend the significance of Bureaucracy in Public Administration and familiarize the recruitment process and training
		CO4	Understand the features of Financial Administration in India, focusing on the budgetary process and the role of the CAG.
		CO5	Understand the emerging trends in Public Administration in India.
PS 1542	**Ancient and Medieval Political Thought**	**CO1**	Acquire understanding on the ancient Greek ideas on state and society
		CO2	Understand and analyses the Roman Political ideas and compare it with Greek ideas
		CO3	Understand ancient Indian wisdom and compare it with other ideas.
		CO4	Analyse and evaluate the Medieval political ideas critically
PS 1543	**International Relations**	**CO1**	To understand the nature and the Scope of International Relations.
		CO2	To impart basic knowledge about basic concepts and theories of International Relations.
		CO3	To enable the students to evaluate foreign policy decisions and its implications on Diplomatic relations.
		CO4	To critically evaluate the various issues of global politics.

PS 1544	**Research Methods in Political Science**	**CO1**	To introduce the nature and modalities of research in Social Sciences in general and Political
		CO2	To understand the major steps involved in arriving at a research topic and developing it further.
		CO3	To expose students to the practicalities of research in Political Science, particularly in regard to data collection.
		CO4	To facilitate students critically analyse the collected data and create a scientific report of their own
PS 1545	**Human Rights in India**	**CO1**	Impart basic understanding about the concept of Human Rights, its evolution and importance in our society.
		CO2	To Understand the role and functions of international human rights mechanisms in the changing international order
		CO3	To have a need based understanding of the instituional arrangements in India at various levels to protect Human Rights.
		CO4	To develop a critical understanding of the issues faced by socially excluded groups like Dalits, Women, Children, Differently Abled, Transgender at the national level.
PS 1551.2	**Human Rights in India**	**CO1**	To familiarize with the basic concepts of Human Rights.

		CO2	To make a detailed understanding about the constitutional provisions and statutory institutions dealing with Human Rights.
		CO3	To develop a critical assessment of the human rights issues faced by vulnerable sections.
		CO4	To have a critical understanding about the new dimensions of human rights in general
SEMESTER VI			
PS 1641	**Modern Political Thought**	**CO1**	To introduce the idea of state and government through the conceptual cues of the social contract theories of the 17th century in Europe.
		CO2	To provide adequate understanding of the utilitarian tradition and lead the students to maintaining proper awareness of countervailing traditions of the liberals, with special reference to German Idealist philosopher W.H.Hegel.
		CO3	To equip students to analyse contemporary political reality with the help of the theoretical tools provided by Socialist theorists.
		CO4	To familiarise students with the application of the notion of governmentality introduced by Michel Foucault.
		CO5	To evaluate the creative potential of Gandhi's and Ambedkar's views on Social order,

			modern state craft and methods of conflict resolution.
PS 1642	**State and Society in Kerala**	**CO1**	Understand the major social and political trajectories that moulded the modern state of Kerala
		CO2	Understand the present political structure of Kerala and evaluate the deep rooted societal identities of Kerala and relate its relevance.
		CO3	Analyse the aspects of political economy of Kerala.
		CO4	Demonstrate the understanding of the Contemporary discourses in Kerala's society
PS 1643	**Decentralization and Participatory democracy**	**CO1**	To acquire knowledge on the concept of decentralisation and to be able to understand its theoretical perspectives
		CO2	To understand the concept of participatory democracy and to internalise its values
		CO3	To evaluate the emergence of decentralisation in India and to analyse the features of 73rd and 74th Constitutional Amendment Act
		CO4	To familiarise and practice the contrivances of participatory democracy
PS 1644	**New Social Movements**	**CO1**	To understand the notion of New Social Movements (NSMs) using major approaches and theories.

		CO2	To explore the gender-based New Social movements with examples from the Western and non-Western World.
		CO3	To evaluate the trajectory and impact of New Social Movements in India.
		CO4	To analyse the nature of New Social Movements in Kerala and the underlying reasons for its emergence
PS 1651.1	**Elective-Globalization and Indian Political System**	**CO1**	To understand the principles of the program of globalization and its impact in India
		CO3	To evaluate the impact of globalization on the life of Indians.
PS 1645	**Project/ Dissertation**	**CO1**	To inculcate proficiency to identify appropriate research topics and presentation
		CO2	To develop an aptitude for research in Political Science.

NAME OF THE PROGRAMME:COMPLEMENTARY COURSE IN POLITICS FOR FIRST DEGREE PROGRAM IN ECONOMICS,HISTORY AND ENGLISH

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	**COURSE OUTCOME**
SEMESTER I		

PS 1131	Introduction to Political Science	CO1	To understand the major principles of Political Science
		CO2	To analyse various concepts of Political Science
		CO3	To evaluate and analyse various Political ideologies
SEMESTER II			
PS 1231	**Indian Government and Politics**	**CO1**	To understand the basic principles of Indian Constitution
		CO2	To analyse the political system in India
		CO3	To evaluate and analyse major political processes in India
SEMESTER III			
PS 1331	**Public Administration**	**CO1**	To understand the basic principles of public Administration
		CO2	To evaluate major concepts in public Administration
		CO3	To analyse the major terms like organization,personnel administration etc.
SEMESTER IV			
PS 1431	**International Politics**	**CO1**	To understand the concepts in international relations

		CO2	To analyse the changing role of power relations in the international arena
		CO3	To evaluate major issues in international politics

NAME OF THE PROGRAMME:FIRST DEGREE PROGRAM IN ECONOMICS

PROGRAM SPECIFIC OUTCOMES

PSO1 To develop a conceptual foundation and analytical uses in microeconomics

PSO2 To understand the concepts and significance of basic micro economics in day to day activities

PSO3 To introduce a plethora of online resources which will help students teaching learning experience.

PSO4 To enable the students to conduct and criticize empirical studies in economics and related fields .

PSO5 . This course introduces a short introduction to Macro economics and determination of income and employment via multiplier

PSO6 To provide the students an insight into the importance of mathematical methods in economics

PSO7 To introduce students to the micro foundations of macroeconomics, inflation and unemployment, economic growth and fiscal and monetary policies in an open economy

PSO8 The course intends to familiarize the students with the broad contours of

Social Sciences, specifically Economics and its methodologies, tools and analysis procedures.

PSO9 The course is intended to familiarize the students with statistical tools and techniques and enable them to apply these tools in Economics

PSO10 To ensure that students begin to understand basic concepts of Economic Growth and Development and thereby enable them to acquire multi dimensional aspects of developmental issues

PSO11 To understand the basic concepts and theories of international trade and enable students to have a basic understanding of the emerging trends, issues and policies in the .field of international economic system

PSO12 The purpose of this introductory economics course is to enable a student from the non economics background to gain an understanding and an appreciation of the nature and significance of economic activities, conditions, institutions and Indian economy.

PSO13 The course intends to provide an understanding about growth process in Indian economy, sectoral aspects of the economy by focusing agriculture,industry and service sectors, relations of India with external sector and economic reforms

PSO14 The course intends to familiarize the students with the basic concepts in Banking and Finance and develop a comprehensive knowledge on the role of banks in the operation of an economy. It also enables them to know the operation of the Indian Financial System and activities in the financial markets

PSO15 The course is aimed at Introducing the subject matter and scope of public economics, role of government, types of market failures and the concept of public good and Providing a general understanding on the basic fiscal policy instruments

PSO16 The course intends to create environmental awareness among students and provide exposure to disaster management

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
EC 1141	**Introductory Microeconomics**	**CO1**	To develop a conceptual foundation and analytical uses in microeconomics
		CO2	To get an idea on Scarcity, Work and choice
		CO3	To understand the market structure
		CO4	Get an idea on consumer and producer theory
SEMESTER II			
EC 1241	**Intermediate Microeconomics**	**CO1**	To understand laws related to factor inputs

		CO2	To Understand various forms of risk and uncertainty
		CO3	To get an understanding about various process in social interactions
		CO4	Able to understand the change involved in general equilibrium and market failures
SEMESTER III			
EC 1341	**Introductory Macroeconomics**	**CO1**	Analysis the economic fluctuations in current economy.
		CO2	Understand the functioning of banks,money,interest ,Fiscal policy and credit markets
SEMESTER IV			
EC 1441	**Mathematical Methods for Economics**	**CO1**	Able to understand basic mathematical concepts in economics
		CO2	Able to understand various operations of matrix algebra
		CO3	Understand the concepts of differential calculus :application level in economics
		CO4	Got introduced to Integral calculus
EC 1442	**Intermediate Macroeconomcs**	**CO1**	Understand the introduction of open economy macro economics

		CO2	Differentiate Aggregate demand and supply :wages price unemployment
		CO3	Got introduced to relevance of Economic growth
		CO4	Able to understand the micro economic foundation of macro economics
SEMESTER V			
EC 1541	**Methodology and Perspectives of Social Science**	**CO1**	Have an idea on Economic issues and concepts
		CO2	Introduced to the research methodology used in social sciences
		CO3	Analyse certain Global economic evens and contemporary issues
EC 1542	**Statistical Methods for Economics**	**CO1**	To familiarize with statistical tools and techniques
		CO2	Able to understand the relation between regression and correlation
		CO3	Understand the application of Index numbers and Time series analysis
		CO4	Preliminary level application of elements of probability

EC 1543	**Readings in Political Economy**	**CO1**	Understand various passages from classical economist
		CO2	Understand different perspectives of political economies
		CO3	Understand the global economc crises and its aftermath
		CO4	Importance of development thinking
EC1544	**Economic Growth and Development**	**CO1**	Understand concepts of Development
		CO2	understand tools for measuring development
		CO3	Understand the growth models
EC1545	**International Economics**	**CO1**	Basic understanding of theories in International trade
		CO2	Understand the functioning of BOP and Foreign exchange
		CO3	Understand the theories related with commercial policies
SEMESTER VI			
EC1641	**Indian Economy**	**CO1**	Overall idea on the growth process in Indian Economy
		CO2	Provide an Understanding about various sectors in economy
		CO3	Familiarize with Service sector and International trade

		CO4	Understand the external relations and economic reforms
EC1642	**Banking and Finance**	**CO1**	To know the operation of financial systems
		CO2	Familiarize with the basic concepts in banking system
		CO3	Analyzing the structure of Capital market and Money market
EC1643	**Public Economics**	**CO1**	Understand the concepts of Public revenue,Expenditure, and public debt
		CO2	Focus on budgetary system and fiscal federalism
EC 1644	**Environmental Economics and Disaster Management**	**CO1**	Awareness about environmental economics
		CO2	An introduction to theories of externalities
		CO3	An analysis of environmental policy tools
		CO4	Focus on global environmental issues and Disaster management in India
EC1661.1	**KERALA ECONOMY**	**CO1**	Understand structure of Kerala economy
		CO2	Understanding the emerging trends on issues of kerala economy

		CO3	Analysis on kerala s Economic Development

NAME OF THE PROGRAMME:COMPLEMENTARY COURSE IN ECONOMICS FOR FIRST DEGREE PROGRAM IN POLITICAL SCIENCE AND HISTORY

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
EC1131	Foundations of Economic Theory	CO1	To develop a conceptual foundation and analytical uses in microeconomics
		CO2	To get an idea on Scarcity, Work nd choice
		CO3	To understand the market structure
		CO4	Get an idea on consumer and producer theory
SEMESTER II			

EC1231	Money and Banking	CO1	To know the operation of financial systems
		CO2	Familiarize with the basic concepts in banking system
		CO3	Analyzing the structure of Capital market and Money market
SEMESTER III			
EC1331	Introduction to International Trade and Public Economics	CO1	Understand the concepts of Public revenue,Expenditure, and public debt
		CO2	Focus on budgetary system and fiscal federalism
		CO3	Basic understanding of theories in International trade
		CO4	Understand the functioning of BOP and Foreign exchange
		CO5	Understand the theories related with commercial policies
SEMESTER IV			
EC1431	Indian Economy Since Independence	CO1	Understand structure of Kerala economy

		CO2	Understanding the emerging trends on issues of kerala economy
		CO3	Analysis on kerala s Economic Development
		CO4	Overall idea on the growth process in Indian Economy
		CO5	Provide an Understanding about various sectors in economy
		CO6	Familiarize with Service sector and International trade
		CO7	Understand the external relations and economic reforms

NAME OF THE PROGRAMME:FIRST DEGREE PROGRAM IN COMMERCE(FINANCE AND COOPERATION)

PROGRAM SPECIFIC OUTCOMES

PSO 1: 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, compute

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	**COURSE OUTCOME**
SEMESTER I		

CO 1121	**Methodology and Perspectives of Business Education**	**CO1**	To create a basic awareness about the business environment and the role of business in economic development.
		CO2	To provide a holistic, comprehensive and integrated perspective to business education
		CO3	To give a fundamental understanding about ethical practices in business.
CO 1141	**Environmental Studies**	**CO1**	To enable the students to acquire basic ideas about environment and emerging issues about environmental problems.
		CO2	To give awareness about the need and importance of environmental protection
CO 1142	**Management Concepts and Thoughts**	**CO1**	To equip learners with knowledge of management concepts and their application in contemporary organizations
		CO2	To facilitate overall understanding of the different dimensions of the management process.
CO 1131	**Managerial Economics**	**CO1**	To familiarise students with the economic principles and theories underlying various business decisions.
		CO2	To equip the students to apply the economic theories in different business situations.

SEMESTER II

CO 1221	**Informatics and Cyber Law**	**CO1**	To review the basic concepts and fundamental knowledge in the field of informatics and to create an awareness about the nature of the emerging digital knowledge society and the impact of informatics on business decisions.
		CO2	To create an awareness about the cyber world and cyber regulations.
CO 1241	**Financial Accounting**	**CO1**	To familiarize the students with different methods of depreciation.
		CO2	To equip the students to prepare the accounts of specialised business enterprises.
CO 1242	**Business Regulatory Framework**	**CO1**	To provide a brief idea about the framework of Indian business Laws
		CO2	To enable the students to apply the provisions of business laws in business activities
CO 1231	**Business Mathematics**	**CO1**	To familiarise the students with the basic mathematical tools. CO2: To impart skills in applying mathematical tools in business practice
SEMESTER III			
CO 1341	**Entrepreneurship Development**	**CO1**	To familiarize the students with the latest programmes of Government in promoting small and medium industries.

		CO2	To impart knowledge regarding starting of new ventures.
CO 1342	**Advanced Financial Accounting**	**CO1**	To create awareness of accounts related to dissolution of partnership firms.
		CO2	To acquaint students with the system of accounting for different branches and departments.
		CO3	To enable students to prepare accounts of consignments
CO 1343	**Company Administration**	**CO1**	To familiarize the students about the salient provisions of Indian Companies Act 2013.
		CO2	To acquaint the students with Management and Administration of Companies,Compliancerequirements, investigation into the affairs of the company and Winding up procedure
CO 1361.1	**Financial Management**	**CO1**	To familiarise the students with the conceptual framework of financial management.
		CO2	To enable the students to understand the practical application of financial management.
CO 1361.2	**Principles of Co-operation**	**CO1**	To inculcate the principles of co-operation among the students

		CO2	To acquaint the students with the management and working of co-operatives.
CO 1331	**E- Business**	**CO1**	To provide students a clear-cut idea of e-commerce and e-business and their types and models.
		CO2	To acquaint students with some innovative e-business systems.
		CO3	To impart knowledge on the basics of starting online business
SEMESTER IV			
CO 1441	**Indian Financial Market**	**CO1**	To provide a clear-cut ideaabout the functioning of Indian Financial Market in general and Capital market operations in particular
CO 1442	**Banking and Insurance**	**CO1**	To provide a basic knowledge about the theory and practice of banking
		CO2	To provide a basic understanding of Insurance business.
		CO3	To familiarize the students with the changing scenario of Indian Banking and Insurance.

CO 1443	**Corporate Accounting**	**CO1**	To create awareness about corporate accounting in conformity with the provisions of Companies Act, IAS and IFRS.
		CO2	To help the students in preparation of accounts of banking and insurance companies
		CO3	To enable the students to prepare and interpret financial statements of joint stock companies.
CO 1461.1	**Project Finance**	CO1	To familiarise the students with the types of project appraisal, risk analysis, project financing costing and valuing;
		CO2	To provide an overview of global project appraisal issues.
CO 1461.2	**Co-operative management and administration**	**CO1**	To familiarise the students with the principles and practice of co-operative management and administration.
		CO2	To enable the students to identify the issues in the process of management and administration of co-operatives.

CO 1431	**Business Statistics**	**CO1**	To enable the students to gain understanding of statistical techniques those are applicable to business.
		CO2	To enable the students to apply statistical techniques in business.
SEMESTER V			
CO 1541	**Fundamentals of Income Tax**	**CO1**	To familiarize the students about the fundamental concepts of Income Tax.
		CO2	To enable the students to acquire the basic skills required to compute the tax liability of individual assessee with more emphasis on Income from Salaries and Income from House property.
CO 1543	**Marketing Management**	**CO1**	To provide an understanding of the contemporary marketing process in the emerging business scenario.
		CO2	To study various aspects of application of modern marketing techniques for obtaining a competitive advantage in business organizations.

CO 1551.1	**Fundamentals of Financial Accounting**	**CO1**	To enable the students to acquire knowledge in the basic principles and practices of financial accounting.
		CO2	To equip the students to maintain various types of ledgers and to prepare final accounts
CO 1561.1	**Financial Services in India**	**CO1**	To familiarize the students with the structure and functioning of financial service sector in India
CO 1561.2	**Co-operative Legal System**	**CO1**	To give an insight into the prevailing co-operative legal system.
		CO2	To enable the students to understand the legal framework of co-operation
CO 1542	**Cost Accounting**	**CO1**	To familiarize the students with cost and cost accounting concepts
		CO2	To make the students learn cost accounting as a distinct stream of accounting
SEMESTER VI			
CO 1641	**Auditing**	**CO1**	To provide students the knowledge of auditing principles, procedures and techniques in accordance with current legal

			requirements and professional standards.
		CO2	To familiarize students with the audit of Companies and the liabilities of the auditor
CO 1642	**Applied Costing**	**CO1**	To acquaint the students with different methods and techniques of costing.
		CO2	To enable the students to apply the costing methods and techniques in different types of industries.
CO 1643	**Management Accounting**	**CO1**	To enable students to acquire sound knowledge of concepts, methods and techniques of management accounting
		CO2	To make the students develop competence with management accounting usage in managerial decision making and control.
CO 1651.2	**Strategic Management**	**CO1**	To give basic understanding about the concepts related to strategic management.

		CO2	To acquaint the students with the managerial tasks associated with implementing corporate strategy
CO 1661.1	**Taxation Law and Accounts**	**CO1**	To enable the students to understand the provisions of Income Tax for computing Total Income and Tax liability of various persons.
		CO2	To familiarise the students with the procedure of Income Tax Assessment
		CO3	To provide students the basic knowledge of Goods and Service Tax
CO 1661.2	**Co-operative Accounting**	**CO1**	To familiarise the students with the special features of accounting and audit in co-operatives.
		CO2	To enable the students to understand the procedures of co-operative audit.

NAME OF THE PROGRAMME:FIRST DEGREE PROGRAM IN MATHEMATICS

PROGRAM SPECIFIC OUTCOMES

PSO1 : Define various concepts of Mathematics effectively using examples and theirgeometrical visualizations

PSO2: Develop critical thinking in Pure and Applied Mathematics.

PSO3: Analyze and apply various mathematical results in different branches of Mathematics.

PSO4: Model and solve real life problems using Linear Systems of Equations, Linear Programming, Network Flow, Differential Equations, Graph Theory etc.

PSO5: Identify advances in various branches of mathematics.

PSO6 : Apply the programming softwares to mathematical investigations and typesetting scientific documents.

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
MM 1141	**Methods of Mathematics**	**CO 1**	Understands how derivatives are used in practical situations like related rates problems, finding local linear approximations and evaluating indeterminate forms.
		CO 2	Analyzing increasing/decreasing functions, maximum minimum points and motion along a curve
		CO 3	Understand and apply integration methods in the study of motion of a particle in rectilinear motion.
		CO 4	Apply integration methods in finding physical quantities like area, volume etc.

		CO 5	Associate hyperbolic functions as analogues to trigonometric functions and describe the calculus of hyperbolic functions.
SEMESTER II			
MM 1221	**Foundations of Mathematics**	**CO1**	Understands the way in which a mathematician formally makes statements and proves or disproves it and also understands the concept of sets and functions
		CO2	Understand the way parametric equations are considered for curves in 2 space and 3 space
		CO3	Convert equations of curves between rectangular and polar coordinate systems and apply polar coordinate systems tofind arc length and area.
		CO4	Differentiate conic sections and solve application problems using Kepler's laws.
		CO5	Use basic vector operations and to calculate distance in the three dimensional rectangular coordinate system
		CO6	Classify and sketch different quadric surfaces and convert the equation of surfaces between different coordinate systems.
SEMESTER III			
MM 1341	**Elementary Number Theory and Calculus- I**	**CO1**	Understand the fundamental facts in elementary number theory like division algorithm,pigeonhole principle,inclusion exclusion principle, gcd, Euclidean algorithm, lcm and fundamental theorem of arithmetic
		CO2	Understand linear Diophantine equations, existence of solutions and the methods of solving them.

		CO3	Understand the concept of vector valued functions, calculus of vector valued function, tangent and normal vectors and curvature
		CO4	Recognize conceptual variations while advancing from one variable to several variables in calculus and to find the limits, continuity and differentiability of multivariable functions
		CO5	Apply multivariable calculus in optimization problems.
SEMESTER IV			
MM 1441	**Elementary Number Theory and Calculus-II**	**CO1**	Understands the concepts of congruence classes and its applications.
		CO2	Learn about some important results in the theory of numbers including Chinese Remainder Theorem, Euler's theorem, Wilson's Theorem and Fermat's Little Theorem
		CO3	Understands the concept of vector fields and integration of vector valued functions, Green's theorem, Stoke's theorem and Divergence theorem.
		CO4	Understands the concept of multiple integration and applying them to find volume, surface area etc.
SEMESTER V			
MM 1541	**Real Analysis I**	**CO1**	Recognize many properties of the real line $\mathbb{R}$ and learn to define sequence in terms of functions from $\mathbb{R}$ to a subset of $\mathbb{R}$.
		CO2	Recognize bounded, convergent, divergent, Cauchy and monotonic sequences and to calculate their limit superior, limit inferior, and the limit of a bounded sequence.

		CO3	Apply the ratio, root, alternating series and limit comparison tests for convergence and absolute convergence of an infinite series of real numbers.
		CO4	Interpret the topological structure of Real Line and apply the knowledge in identifying closed sets, open sets, connected sets etc.
MM 1542	**Complex Analysis I**	**CO1**	Visualize complex numbers as points of R^2 and understand the various operations in the set of complex numbers and also its topology.
		CO2	Visualize complex numbers as points of R^2 and understand the various operations in the set of complex numbers and also its topology.
		CO3	Understand the significance of differentiability and analyticity of complex functions leading to the Cauchy-Riemann equations.
		CO4	Define elementary complex functions and understand its properties.
MM 1543	**Abstract Algebra – Group Theory**	**CO1**	Recognize the mathematical objects called groups and classify them in terms of number of elements and understand the characterizations of subgroups.
		CO2	Analyze fundamental properties of permutation groups and link the fundamental concepts of groups and symmetries of geometrical objects using isomorphism.
		CO3	Explain the significance of the notions of cosets, normal subgroups, factor groups and analyze consequences of Lagrange's theorem.
		CO4	Identify structural preserving maps and will be able to classify finite groups.
MM 1544	**Differential Equations**	**CO1**	Understand the genesis of Ordinary Differential equations

		CO2	Learn various techniques of getting exact solutions of solvable linear first order and second order Ordinary Differential equations
		CO3	Construct mathematical models in the form of Ordinary Differential equations to suggest possible solutions of the day to day problems arising in physical, chemical and biological disciplines.
MM 1545	**LaTeX and SageMath**	**CO1**	Understand and apply the programming concept of SageMath which is important for problem solving.
		CO2	Understand and apply the typesetting software LaTeX for typesetting mathematics documents.
		CO3	Apply the knowledge of LaTeX for creating Project Report.
MM 1551.2	**Business Mathematics(Open Course)**	**CO1**	Develop ability to solve problems related to simple and compound interest which would help the students while appearing for competitive examinations
		CO2	Developing the skill to mathematically formulate the problems of business and economics and solving them using the tehniques of calculus
		CO3	Getting introduced to the concepts of index numbers and its use in business and economics
SEMESTER VI			
MM 1641	**Real Analysis II**	**CO1**	Understand the concepts like limits and continuity of functions.
		CO2	Understands the difference between continuity and uniform continuity. Identify functions which are continuous and which are uniformly continuous
		CO3	Understands the concept of differentiability and are able to identify differentiable functions, continuous but non differentiable functions.

		CO4	Learn Riemann Integrability and different criterion for Riemann Integrability
MM 1642	**Complex Analysis II**	**CO1**	Understand the convergence, term by term integration and differentiation of a power series
		CO2	Learn Taylor and Laurent series expansions of functions, classify the nature of singularity, poles and residues and application of Cauchy Residue Theorem
		CO3	Learn how to evaluate various integrals
		CO4	Understand the concept of conformal mapping and mobius transformations
MM 1643	**Abstract Algebra – Ring Theory**	**CO1**	Recognize the higher algebraic structures like Rings, Integral Domains and Fields and understand the properties of them.
		CO2	Understand the concepts like Ideals, Quotient Rings and Ring Homomorphism.
		CO3	Interpret division algorithm,factor theorem and remainder theorem in the rings of polynomials and toconstruct Quotient Rings.
		CO4	Identify various types of integral domains and compare Principal Ideal domains, Euclidean Domains and Unique factorization domains.
MM 1644	**Linear Algebra**	**CO1**	Understand the concept of Gaussian Elimination method and apply it in solving system of linear equations
		CO2	Understand the concepts of vector spaces, subspaces, linear independence, bases, dimension and their properties
		CO3	Understands the concepts of linear transformations and their properties ; the ideas and concepts of determinants, properties and its applications

		CO4	Understands the concepts of eigenvalues, eigen vectors, diagonalization of matrices and orthogonality of vectors
		CO5	Understands the application of matrices
MM 1645	**Integral Transforms**	**CO1**	Learn and understands the concept of Laplace Transform and Inverse Laplace Transform
		CO2	Apply Laplace transform to evaluate integrals, solve differential equations and initial value problems.
		CO3	Understands Fourier series and transforms
		CO4	Apply the knowledge of Fourier series and Fourier transforms in various problems
MM 1661.1	**Graph Theory**	**CO1**	Define graphs along with their types and examples
		CO2	Understand the definition of a tree and learn its applications
		CO3	Understand the notion of planarity
		CO4	Relate graph theory to the real world problems

NAME OF THE PROGRAMME:COMPLEMENTARY COURSE IN MATHEMATICS FOR FIRST DEGREE PROGRAM IN PHYSICS

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
MM 1131.1	**Calculus with Applications in Physics-I**	**CO1**	Remember the basics of differentiation like product rule, quotient rule, logarithmic differentiation etc and then learn the Leibnitz Theorem and apply them to solve problems
		CO2	Apply differentiation to find stationary points and to find curvature and then learn important theorems like Rolle's and Mean value Theorem and their applications.
		CO3	Understands the basics of integration and applies integration techniques to solve area, volume problems
		CO4	Understands the concept of convergence of infinite series and applying various tests for convergence, power series and its convergence.
		CO5	Define basic vector operations and identify its applications
		CO6	Explain and solve distance problems using vectors by using parametric equations of lines and planes
SEMESTER II			
MM 1231.1	**Calculus with Applications in Physics II**	**CO1**	Understand the concept of partial differentiation and learn to find stationary points of multi-variable functions
		CO2	Visualize complex numbers as points of R^2 and understand the various operations in the set of complex numbers
		CO3	Explain the polar representation of complex numbers and interpret complex logarithms and complex powers.
		CO4	Describe the applications of complex functions to differentiation and integration.
		CO5	Associate hyperbolic functions as analogues to trigonometric functions and

			describe the calculus of hyperbolic functions.
		CO6	Learn to find multiple integrals and apply them to find areas and volumes
		CO7	Describe Differentiation of Vectors and its simple applications
		CO8	Explain vector differential operators and to calculate Gradient, Divergence and Curl of a Vector field both in rectangular spherical and cylindrical systems.
SEMESTER III			
MM 1331.1	**Calculus and Linear Algebra**	**CO1**	Understand the genesis of Ordinary Differential equations and Learn various techniques of getting exact solutions of solvable linear first order, second order and higher Ordinary Differential equations
		CO2	Understand the concept of Laplace Transform and apply it to solve initial value problems.
		CO3	Compute Line integrals of vector functions and identify their applications
		CO4	Evaluate Surface and volume integrals and learn their inter relations and applications.
		CO5	Associate Fourier series expansion with a given periodic function and to deduce the sum of numerical series from it.
		CO6	Compute/ Determine Fourier transform of a given non periodic function.
		CO7	Solve system of linear equations, finding eigenvalues and vectors diagonalization of a matrix and its applications
SEMESTER IV			
MM 1431.1	**Complex Analysis, Special functions and Probability Theory**	**CO1**	Understand the significance of differentiability and analyticity of complex functions leading to the Cauchy-Riemann equations
		CO2	Understand the concepts of contour integration, and learn the role of Cauchy theorem and Cauchy integral formula in evaluation of contour integrals

		CO3	Identify Taylor and Laurent series expansions of analytic functions, classify the nature of singularity, poles and residues and application of Cauchy Residue Theorem in the evaluation of definite integrals
		CO4	Define Factorial, Gamma and Beta functions
		CO5	Describe the formulas involving Gamma functions and define Beta function in terms of Gamma function
		CO6	Understand the concepts of probability, random variables and distributions.

NAME OF THE PROGRAMME:COMPLEMENTARY COURSE IN MATHEMATICS FOR FIRST DEGREE PROGRAM IN CHEMISTRY

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
MM 1131.2	**Calculus with Applications in Chemistry-I**	**CO1**	Remember the basics of differentiation like product rule, quotient rule, logarithmic differentiation etc and then learn the Leibnitz Theorem and apply them to solve problems
		CO2	Apply differentiation to find stationary points and to find curvature and then learn important theorems like Rolle's and Mean value Theorem and their applications.
		CO3	Visualize complex numbers as points of R^2 and understand the various operations in the set of complex numbers
		CO4	Explain the polar representation of complex numbers and interpret complex logarithms and complex powers.
		CO5	Describe the applications of complex functions to differentiation and integration.
		CO6	Associate hyperbolic functions as analogues to trigonometric functions and describe the calculus of hyperbolic functions.
		CO7	Define basic vector operations and identify their applications
SEMESTER II			
MM 1231.1	**Calculus with Applications in Chemistry-II**	**CO1**	Understand the concept of partial differentiation and learn to find stationary points of multivariable functions
		CO2	Understands the concept of convergence of infinite series and applying various tests for convergence, power series and its convergence

		CO3	Describe Differentiation of Vectors and its simple applications
		CO4	Explain vector differential operators and to calculate Gradient, Divergence and Curl of a Vector field both in rectangular spherical and cylindrical systems.
		CO5	Learn to find multiple integrals and apply them to find areas and volumes
SEMESTER III			
MM 1331.2	**Linear Algebra Probability Theory and Numerical Methods**	**CO1**	Solve system of linear equations, finding eigenvalues and vectors diagonalization of a matrix and its applications
		CO2	Understand the concepts of probability, random variables and distributions
		CO3	Describe common numerical methods and how they are used to obtain approximate solutions to otherwise intractable mathematical problems
		CO4	Apply numerical methods to various mathematical operations and tasks, such as interpolation, differentiation, integration, the solution of system of linear equations, and the solution of first order linear differential equations
SEMESTER IV			
MM 1431.2	**Differential Equations, Vector Calculus and Abstract Algebra**	**CO1**	Understand the genesis of Ordinary Differential equations and Learn various techniques of getting exact solutions of solvable linear first order, second order and higher Ordinary Differential equations
		CO2	Understand the concept of Laplace Transform and apply it to solve initial value problems.
		CO3	Compute Line integrals of vector functions and learn their applications

		CO4	Evaluate Surface and volume integrals and learn their inter relations and applications.
		CO5	Recognize the mathematical objects called groups and classify them in terms of number of elements and understand the characterizations of subgroups.
		CO6	Analyze fundamental properties of permutation groups and link the fundamental concepts of groups and symmetries of geometrical objects using isomorphism.
		CO7	Understand equivalent representations of Groups and reducibility of the representation
		CO8	Explain orthogonality theorem for irreducible representations, orthogonality property of characters and construct character table

NAME OF THE PROGRAMME:COMPLEMENTARY COURSE IN MATHEMATICS FOR FIRST DEGREE PROGRAM IN STATISTICS

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
MM 1131.4	**Basic Calculus for Statistics**	**CO1**	Remember the basics of differentiation like product rule, quotient rule, logarithmic differentiation etc and then learn the Leibnitz Theorem and apply them to solve problems
		CO2	Apply differentiation to find stationary points and to find curvature and then learn important theorems like Rolle's and Mean value Theorem and their applications.
		CO3	Understands the concept of partial differentiation and apply the problem solving techniques
		CO4	Apply chain rule in of partial differentiation
		CO5	Explain Lagrange Multiplier method for constrained optimization and applications
SEMESTER II			
MM 1231.4	**Advanced Differential and Integral Calculus**	**CO1**	Understand and apply the concept integration techniques like substitution,hyperbolic functions, integration by parts, trigonometric substitution and partial fraction
		CO2	Compute arc length of curves and area of revolution
		CO3	Compute double integrals
		CO4	Analyze the convergence of infinite series by various techniques
SEMESTER III			
MM 1331.4	**Fourier series, Numerical Methods and ODE**	**CO1**	Understand Eulers formulae, even and odd functions, half range series, Fourier transforms and analyze their properties
		CO2	Compute numerical solutions of equations
		CO3	Apply different methods for numerical solutions of ordinary differential equations

		CO4	Understand different types of first order differential equations and compute its solutions
SEMESTER IV			
MM 1431.4	**Linear Algebra**	**CO1**	Understand the concept of vector space and analyze its properties
		CO2	Apply Gram-Schmidt orthogonalization process
		CO3	Compute rank of a matrix
		CO4	Analyze the solution of a system of linear equations
		CO5	Analyze whether a matrix is diagonalizable or not
		CO6	Understand the concept of linear transformation, analyze the relation between matrices of a transformation relative to two different bases

NAME OF THE PROGRAMME:FIRST DEGREE PROGRAM IN ZOOLOGY

PROGRAM SPECIFIC OUTCOMES

PSO1: To develop an interest towards our nature and other living organisms and understand the nature and basic concepts of Zoology and Imparting the need for environmental protection and sustainable development

PSO2: Acquire knowledge on major branches of zoology such as Taxonomy, Physiology, Cell biology, Developmental biology, genetics, ecology, applied Zoology and advanced interdisciplinary fields like Bioinformatics, Biophysics, Biochemistry, Biotechnology, Microbiology etc..

PSO3 :To create an awareness on our general body plan – organ and organ systems- its anatomy and physiology- health and hygiene and detailed knowledge about communicable and non-communicable human diseases and their management

PSO4: Developing knowledge and skill on self employment opportunities in applied fields like Sericulture Apiculture, Aquaculture, Dairy and poultry farming and also in acquiring skill on haematological analysis in the laboratory

PSO5 : Develop ability to analyze the environmental pollution through laboratory experiments and impart knowledge on Waste management through vermiculture etc.

PSO6 :To identify and get knowledge about various endemic species- to study animal behaviour - by visiting national parks and wild life sanctuaries, making various ecosystem models

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOMES	
SEMESTER I			
ZO1141	**Animal Diversity I**	**CO1**	Realize the amazing diversity of invertebrates
		CO2	Understand the hierarchical organization of invertebrates
		CO3	Be aware of the economic importance of invertebrates with special reference to insect pests that cause serious threat to important crops like paddy, coconut etc.
		CO4	Trace the evolutionary history of invertebrates and identify correlations.
		CO5	To understand biological diversity through systematic classification
		CO6	To acquire knowledge about parasites
SEMESTER II			
ZO1241	**Animal Diversity II**	**CO1**	Distinguish vertebrates and invertebrates
		CO2	Understand systematic position of vertebrates found in different habitats

		CO3	Learn the economic and ecological importance of vertebrates
		CO4	Investigate the interconnections within the evolutionary history of vertebrates
		CO5	To Evaluate the cellular, tissue, organ and organismal level of organization
		CO6	To develop key concept of similarity, behavior and ecological adaptations
SEMESTER III			
ZO1341	**Experimental Zoology, Instrumentation, Biostatistics and Bioinformatics**	**CO1**	Understand the opportunities in the field of life science
		CO2	Use of instruments in experiments and research
		CO3	Apply biostatistics to analyze experimental data and draw meaningful conclusions.
		CO4	Use of bioinformatics in experiments and research
SEMESTER IV			
ZO1441	**Ecology, Habitat Destruction & Disaster Management**	**CO1**	Understand the basic principles of ecology and the functioning of ecosystems
		CO2	Create awareness about ecological interactions and also identify the impact of human intervention on the existence of the ecosystem
		CO3	Assess disaster causes, consequences, and prevention/mitigation strategies.
		CO4	Implement remedial measures to mitigate the impact of human activities on ecosystems.
SEMESTER V			
ZO1541	**Cell and Molecular Biology**	**CO1**	To acquire knowledge about cell organelles, and their role in living organism
		CO2	To make aware about risk assessment, detection, diagnosis, treatment, and prevention of cancer

		CO 3	To Enable students to recognize the early signs and symptoms of cancer, thus enabling them to seek treatment at an early stage.
		CO4	To observe public health perspective of elderly people suffering with chronic age-onset diseases
		CO5	Understand the principles and mechanism involved in molecular biology
ZO1542	**Genetics and Biotechnology**	**CO1**	Understand the mechanism and principles of heredity and variation
		CO2	Know about Genetic counseling and its application
		CO3	Learn different genetic disorders, its causes and possible ways to reduce its occurrence
		CO4	Create awareness about genetic principles and biotechnological tools for the welfare of mankind
ZO1543	**Immunology and Microbiology**	**CO1**	Gain insight into the principles and mechanisms that govern the field of immunology
		CO2	Recognize the significance and breadth of clinical immunology in healthcare practices
		CO3	Understand various types of microorganisms and their effects
		CO4	Analyse the application of microorganisms in various fields
ZO1442	**Practical I – Instrumentation Animal DiversityI and Animal Diversity II**	**CO1**	Study organism morphology to understand their physical structure
		CO2	Understand the anatomy and organ system of invertebrate organisms.
		CO3	Understand the economically important invertebrates and vertebrates and their significance
		CO4	Understand the principles and the mechanisms of instruments used in Zoology
ZO1551.1	**Public Health and Hygiene**	**CO1**	Understand the importance of public health, hygiene, balanced diet and nutritional disorders
		CO2	Identify the food adulteration
		CO3	Understand the causes and manifestation of physical and mental diseases

		CO4	Apply the preventive and therapeutic measures for physical and mental diseases
ZO1432	**Practical II-Animal Diversity I& II, Functional Zoology and Applied Zoology**	**CO1**	Create awareness about morphology and anatomy of organisms
		CO2	Identify economically important species.
		CO3	Recognise different types of blood cells and blood groups
		CO4	Understand genetic principles in identifying genetic disorders
SEMESTER VI			
ZO1641	**Physiology and Biochemistry**	**CO1**	Recognize the interrelationship between organ and organ system structures and their corresponding functions within the body.
		CO2	Comprehend the potential causes of abnormal physiological processes and the resulting diseases.
		CO3	Understand the structure and different types of proteins, lipids and carbohydrates and their significance.
		CO4	Learn the metabolism of biomolecules through various anabolic and catabolic pathways, energy production and also their deficiency disorders
ZO1642	**Developmental Biology and Experimental Embryology**	**CO1**	Create awareness about embryological development of organisms
		CO2	To achieve basic knowledge of the experimental embryology and used for future studies and research
		CO3	To contribute logical thinking of congenital anomalies and their etiology
		CO4	Critically evaluate causes and apply control measures of congenital malformations
		CO5	Understand the advanced techniques in experimental embryology
ZO1643	**Ethology, Evolution and Zoogeography**	**CO1**	Explore basic principles of animal behavior a n d f a c t o r s t h a t i n f l u e n c e i t .

		CO2	Know various communication me a n s among animals such as visual, auditory, olfactory, chemical etc.
		CO3	Understand the concept of organic evolution, fossil records and evolutionary history of humans
		CO4	Understand the distributional pattern of animals in various zoogeographical realms
ZO1651.2	**Ornamental Freshwater fish production**	**CO1**	To make the students aware about the diversity of ornamental fishes and also to recognize both indigenous and exotic fishes
		CO2	To familiarize the feeding, and reproductive behaviours of the commercially important ornamental fishes
		CO3	Familiarize with the water quality management in culture systems/aquariums, various diseases and their control measures
		CO4	To learn the scientific methods in setting up of aquarium
		CO5	Understand the production, culture and marketing techniques of common indigenous fishes
		CO6	To develop students as entrepreneurs in the ornamental fish production sector
ZO1644	**Practical II - Cell Biology, Genetics, Bioinformatics, Biotechnology, Immunology and Microbiology**	**CO1**	Distinguish various cell types and bacterial organisms
		CO2	Recognize the different stages involved in cell division and the structural characteristics of genetic materials.
		CO3	Identify and make awareness about different types genetic syndromes
		CO4	Experiment on enumeration blood cells and typing of blood
ZO1645	**Practical III- Physiology and Biological Chemistry, Molecular Biology and Biostatistics**	**CO1**	Understand the clinical procedures for blood & urine analysis
		CO2	Isolation and estimation of amino acids and haemoglobin
		CO3	Understand the structure and function of various vital organs
		CO4	Use of statistical methods to analyze data

ZO1646	**Practical IV-** **Developmental Biology, Ecology,** **Ethology, Evolution and Zoogeography**	**CO1**	Identify developmental aspects in various stages of different organisms like, chick, frog, human
		CO2	Estimate the physico-chemical parameters of water sample
		CO3	Understand the ecological adaptations and evolutionary significance of organisms
		CO4	Understand the mechanism of different types of traps in pest management
ZO1647	**Zoology Project and Field study**	**CO1**	Select a suitable research topic and prepare a corresponding presentation.
		CO2	Familiarize the students various ecosystems and interrelationship of organism with environment
		CO3	Students develop research skills including experimental design, collection, data analysis and data analysis and finding solutions.
		CO4	From field study, students get hands on experience in applying theoretical knowledge they have acquired in the classroom
		CO5	Students learn to work independently or in teamwork and collaboration skills

NAME OF THE PROGRAMME:COMPLEMENTARY COURSE IN ZOOLOGY FOR FIRST DEGREE PROGRAM IN BOTANY

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOMES

SEMESTER I			
ZO1131	**Animal Diversity I**	**CO1**	Realize the amazing diversity of invertebrates
		CO2	Understand organization of invertebrates
		CO3	Be aware of the economic importance of invertebrates
		CO4	Trace the evolutionary history of invertebrates and identify correlations
		CO5	To understand biological diversity through systematic classification
		CO6	To acquire knowledge about parasites
SEMESTER II			
ZO1231	**Animal Diversity II**	**CO1**	Distinguish vertebrates and invertebrates
		CO2	Understand systematic position of vertebrates found in different habitats
		CO3	Learn the economic and ecological importance of vertebrates
		CO4	Investigate the interconnections within the evolutionary history of vertebrates
		CO5	To Evaluate the cellular, tissue, organ and organismal level of organization
		CO6	To develop key concept of similarity, behavior and ecological adaptations
SEMESTER III			
ZO1331	**Functional Zoology**	**CO1**	Impart functional knowledge about human physiology
		CO2	Identify various precautionary measures to safeguard health
		CO3	Create awareness about deficiency and imbalance disorders in the body
		CO4	Understand the role of immune system in maintaining life

SEMESTER IV			
ZO1431	**Applied Zoology**	**CO1**	Understand the basic principles of Apiculture, sericulture, aquaculture and livestock management
		CO2	Create awareness about human genomics and reproductive biology
		CO3	Understand genetic and developmental disorders
		CO4	Analyse the possibilities of self employment by deploying various livestock management systems
ZO1432	**Practical II-Animal Diversity I& II,** **Functional Zoology and Applied Zoology**	**CO1**	Create awareness about morphology and anatomy of organisms
		CO2	Identify economically important species.
		CO3	Recognise different types of blood cells and blood groups
		CO4	Understand genetic principles in identifying genetic disorders

NAME OF THE PROGRAMME:COMPLEMENTARY COURSE IN ZOOLOGY FOR FIRST DEGREE PROGRAM IN BIOTECHNOLOGY

COURSE OUTCOME (CO)

OURSE CODE	COURSE NAME	COURSE OUTCOMES	
SEMESTER I			
		CO1	Realize the amazing diversity and organization of invertebrates and vertebrates

BV 1231.1	**Animal Diversity – Non-chordata & Chordata**	**CO2**	Be aware of the economic and ecological importance of invertebrates and vertebrates
		CO3	Trace the evolutionary history of invertebrates and understand biological diversity through systematic classification
		CO4	Investigate the interconnections within the evolutionary history of vertebrates
		CO5	To Evaluate the cellular, tissue, organ and organismal level of organization
		CO6	To develop key concept of similarity, behavior and ecological adaptations
		CO7	To acquire knowledge about parasites
SEMESTER II			
BV 1231.1	**Animal Physiology & Anatomy**	**CO1**	Impart functional knowledge about human physiology
		CO2	Identify various precautionary measures to safeguard health
		CO3	Create awareness about deficiency and imbalance disorders in the body
		CO4	Understand the role of immune system in maintaining life
		CO4	Create an awareness about Human body and also comparative anatomy of organisms
SEMESTER III			
BV1331.1	**Developmental Biology, Human Genetics and Animal behaviour**	**CO1**	Understand the developmental aspects of animals- events and changes in fertilization – familiarizing advanced prenatal diagnostic techniques
		CO2	Create awareness about heredity and variation, Mendalian traits, sex linked inheritance and genetic disorders
		CO3	Study stimulus and response, behaviour and different types of learning in animals, social behaviour

SEMESTER IV			
BV1431.1	**Practical II-Animal Diversity I & II, Functional Zoology and Applied Zoology**	**CO1**	Create awareness about morphology and anatomy of organisms
		CO2	Identify economically important species.
		CO3	Recognise different types of blood cells and blood groups
		CO4	Understand genetic principles in identifying genetic disorders

NAME OF THE PROGRAMME:FIRST DEGREE PROGRAM IN BOTANY

PROGRAM SPECIFIC OUTCOMES

PSO1: The students are expected to acquire knowledge of plant and related subjects so as to understand natural phenomenon, manipulation of nature and environment for the benefit of human beings.

PSO2 : To develop ability for the application of acquired knowledge to improve agriculture and other related field to make the country self reliant and sufficient.

PSO3 : To develop skill in practical works, experiments and laboratory materials and equipments along with the collection and interpretation of scientific datato contribute the science.

PSO4 : To enrich the students with latest developments in the field of information technology, biotechnology , bioinformatics and other rekllated fields of research and development.

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME

SEMESTER I			
BO 1141	**Microtechnique, Angiosperm Anatomy, Reproductive Botany and Palynology**	**CO1**	Students are able to understand the complexities of cell wall organization, microscopic and sub microscopic structures
		CO2	Students can distinguish various anatomical features of monocots and dicots (stem and root) with respect to permanent tissues and tissue systems.
		CO3	Identify and differentiate male and female gametophyte development in angiosperms.
		CO4	Distinguish monocot and dicot embryo and the basic features of pollen grains.
SEMESTER II			
BO1221	**Methodology& Perspectives in Plant Science**	**CO1**	Students will be familiarized with the fundamental characteristics of Science.
		CO2	Develops an idea about involvement of science in improvement of human life.
		CO3	Create awareness of scientific approach towards life and learns the values of ethics in science.
		CO4	Develops skills to interpret scientific data using basic statistical methods.
		CO5	Create skills to prepare specimens for microscopic and gross anatomical studies andfamiliarize with different microscopic methods for sample analysis.
SEMESTER III			
BO 1341	**Microbiology, phycology, mycology, lichenology and plant pathology**	**CO1**	The student can prepare micropreparations and identify the thallus andreproductive structures of lower plant groups like algae, fungi and lichen

		CO2	An awareness created among students about various microbes, structure and economic importance
		CO3	Students can use effectively the methodology to isolateand identify bacteria present in curd and root nodules
		CO4	Can identify various plant diseases, etiology of pathogens and control measures
SEMESTER IV			
BO 1441	**Bryology, pteridology, gymnosperms and palaeobotany**	**CO1**	Students are able to make micropreparations of thallus and reproductive structures of as well as better understanding of the life cycle of selected members of Bryophytes, Pteridophytes and Gymnosperms
		CO2	Can understand the economic and ecologic importance of lower groups of plant kingdom
		CO3	Better understanding of fossilization and importance of Palaeobotany
		CO4	Identify various parts of fossil plants through micro slides
SEMESTER V			
BO 1541	**Angiosperm morphology, systematic botany, economic botany, ethno botany and pharmacognosy**	**CO1**	Ability to identify different types of inflorescences, flowers and fruits, their arrangementand relative position.
		CO2	Familiarization of basic rules of Angiosperm classification and different types ofclassification.
		CO3	Preparation and maintenance of Herbarium.
		CO4	Identification of plants to their respective families.

		CO5	Understanding of ethnobotanical and pharmacological significance of plants.
BO 1542	**Environmental studies , disaster management, phytogeography & research methodology**	**CO1**	Develops awareness about natural resources, its conservation and importance ofsustainable lifestyles.
		CO2	Understands and identify different ecosystems and ecosystem processes.
		CO3	Develops deep understanding about biodiversity and importance of its conservation
		CO4	Develops skills to identify polluted sites, its major pollutants and recognize the need tomitigate environmental pollution
		CO5	Awareness about different types of disasters and to adopt strategies to overcome andreduce the impact
		CO6	Identify the importance of phytogeographical sites in India
		CO7	Can devise an experimental design and carry out a project
		CO8	Students trained about various steps for the conduct of a research project and write aproject report.
BO 1543	**Cell biology, genetics and evolutionary biology**	**CO1**	Students have a better understanding of cell structure and cell organelles
		CO2	Prepare microslides of cell divisions and identify various stages of mitosis and meiosis
		CO3	Able to workout problems in classical genetics, modified mendelian ratios and populationgenetics
		CO4	Able to understand genetic diseases and their inheritance
		CO5	Understand evolutionary principles, theories and methods of speciation

BO 1551.3	**Forestry**	**CO1**	To get a knowledge about types of forest and sylviculture
		CO2	To get knowledge about forest produce
		CO3	To understand agroforestry
		CO3	To analyze the ideological foundations of the Human Right Movement
		CO4	To evaluate the process of the historical development of human rights in History
SEMESTER VI			
BO 1641	**Plant physiology and biochemistry**	**CO1**	Students get a clear understanding of the basic concepts of Physiology and Biochemistry.
		CO2	Understands photosynthesis, respiration, plant growth regulators, nitrogen metabolism, and stress physiology
		CO3	Familiarization of basic physiological practical procedures.
		CO4	Students get the basic knowledge about the macromolecules and their overall role in cell metabolism; and secondary plant products.
		CO5	Identification of protein, reducing and non reducing sugar by qualitative tests
BO 1642	**Molecular biology, general informatics &bioinformatics**	**CO1**	Understands DNA as genetic material, develops awareness about chemical compositionand different types of DNA including their replication method.

		CO2	Students understand various molecular aspects of gene expression and regulation of genes
		CO3	Develops awareness about various academic services applied for their studies
		CO4	To evaluate the Total History approach and post-modern turn in historical thinking and writing
		CO5	Recognizes the need for safe use of internet and also become aware about health issues related to over usage of computers and mobile phones as well as cyber crimes and cyberlaws.
		CO6	Students will be familiarized to molecular phylogeney, Biological Databases,Sequenceanalysis, Genomics, Proteomics & Comparative genomics
BO 1643	**Biotechnology, nanobiotechnology, horticulture & plant breeding**	**CO1**	Students are familiarized in preparation of culture solutions, sterilization, inoculationof explants, induction of callus and morphogenesis
		CO2	They are familiarized in biotechnological tools like RFLP, RAPD and PCRtechniques
		CO3	Appreciate the application of equipments and tools in biotechnology
		CO4	Understanding of ethical and legal issues in biotechnology and basic knowledgeabout IPR
		CO5	Better understanding of nanosystems, and applications of nanomaterials

		CO6	Students able to identify and use various horticultural implements
		CO7	Can propagate plants through grafting, budding and layering &can prepare manures, fungicides etc
		CO8	Can effectively do plant breeding methods and understands ttheir practical application in betterment of food crops
BO 1661.2	**Mushroom cultivation and marketing**	**CO1**	Identify mushrooms, structure and mode of propagation
		CO2	Better understanding of methods of processing and storage of mushrooms

NAME OF THE PROGRAMME:COMPLEMENTARY COURSE IN BOTANY FOR FIRST DEGREE PROGRAM IN ZOOLOGY

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
BO 1131	**Microtechnique, Angiosperm Anatomy and Reproductive Botany**	**CO1**	To develop skills for preparation and identification of microscopic structures.
		CO2	To distinguish various tissue systems and the internal structures.
		CO3	To acquire basic knowledge about embryo development and pollen grains.
		CO4	To evaluate the new trends and ideas
SEMESTER II			

BO 1231	**Thallophytes, Archegoniatae and plant pathology**	**CO1**	To familiarize characteristic features of microbes and their significance in environment
		CO2	To generate idea about types of algae, fungi, lichen and their economic as well as evolutionary significance
		CO3	To familiarize the students the characteristic features, life cycle and evolutionarysignificance of Bryophytes, Pteridophytes and Gymnosperms.
		CO4	To impart knowledge about diseases in plants
SEMESTER III			
BO 1331	**Systematic botany, economic botany, ethno botany, plant breeding**	**CO1**	To introduce importance of morphological characters in classification and plant identification.
		CO2	To develop skill in identification of plants
		CO3	To acquire knowledge about economic, ethnobotanical significance and pharmacognosyof plants
		CO4	To get knowledge about plant breeding techniques
SEMESTER IV			
BO1431	**Plant physiology,plant ecology, horticulture and plant biotechnology**	**CO1**	To understand physiology of absorption, photosynthesis and respiration.
		CO2	To study ecosystem and ecological modifications
		CO3	To generate awareness about horticultural techniques.
		CO4	To familiarize plant tissue culture techniques

NAME OF THE PROGRAMME:FIRST DEGREE PROGRAM IN PHYSICS

PROGRAM SPECIFIC OUTCOMES

PSO1 Understand the basic laws and explore the fundamental concepts of physics

PSO2 To understand the concepts and significance of the various physical phenomena.

PSO3 To carry out experiments to understand the laws and concepts of Physics.

PSO4 To apply the theories learnt and the skills acquired to solve real time problems.

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
PY1141	**BASIC MECHANICS & PROPERTIES OF MATTER**	**CO 1**	To understand the dynamics of rigid bodies
		CO 2	To get an idea on the physical concepts of oscillations
		CO 3	To understand elastic property of materials
		CO 4	Get an idea on fluid dynamics
SEMESTER II			
PY1241	**HEAT AND THERMODYNAMICS**	**CO1**	To understand laws related to flow of heat
		CO2	To Understand various thermodynamic processes
		CO3	To get an understanding about various thermodynamic processes

		CO4	Able to understand entropy change involved in various processes
SEMESTER III			
PY1341	**ELECTRODYNAMICS**	**CO1**	Able to understand magnetism
		CO2	Able to calculate electric fields
		CO3	Understand Maxwell's equations
		CO4	Solve problems related to electric fields
		CO5	Understand transient current and a.c circuits
SEMESTER IV			
PY1441	**CLASSICAL AND RELATIVISTIC MECHANICS**	**CO1**	Able to understand dynamics of a system of particles
		CO2	Able to understand various conservation laws related to physical systems in motion
		CO3	Understand motion of planets
		CO4	Got introduced to lagrangian and hamiltonianand theoretical details of special relativity
SEMESTER V			
PY1541	**QUANTUM MECHANICS**	**CO1**	Understand the origin of quantum mechanics
		CO2	Differentiate classical and quantum behavior of various physical system
		CO3	Got introduced to the mathematical background of quantum mechanics
		CO4	Apply the concepts of Quantum Mechanics to solve problems.
PY1542		**CO1**	Have an idea on statistical physics

	STATISTICAL PHYSICS, RESEARCH METHODOLOGY AND DISASTERMANAGEMENT	**CO2**	Introduced to the researchmethodology used in physics
		CO3	Analyse certain errors in experiment
		CO4	Introduced to disaster management processes
PY1543	**ELECTRONICS**	**CO1**	Introduced to theory related to circuits
		CO2	Understand the working of various diode circuits
		CO3	Understand the working of simple transistor and amplifier circuits
		CO4	Idea on various oscillator circuits
PY1544	**ATOMIC & MOLECULAR PHYSICS**	**CO1**	Understand the preliminary concept of vector atom model
		CO2	Able to understand the origin of atomic spectra
		CO3	Understand the origin of x-rays
		CO4	Theoretical understanding of molecular spectra and resonance spectroscopy
PY1551.5	**ENERGY PHYSICS(Open Course)**	**CO1**	Understand different forms of renewable energy
		CO2	Familiarize production of wind,tidal,solar and chemical energy
		CO3	Understand the global energy crisis and possible solutions
SEMESTER VI			
PY1642	**NUCLEAR ANDPARTICLE PHYSICS**	**CO1**	Understand various nuclear models and basic nuclear properties
		CO2	Understand radioactivity
		CO3	Understand nuclear reactions
		CO4	Understand nuclear fission process

		CO5	Introduced to particle physics
PY1643	**CLASSICAL AND MODERN OPTICS**	**CO1**	Understand the optics behind interference
		CO2	Understand the phenomena of diffraction
		CO3	Understand the phenomena of polarization
		CO4	Understand the principle of laser
		CO5	Understand the principle behind holography
PY 1641	**SOLID STATE PHYSICS**	**CO1**	Overall idea on crystal structure
		CO2	Understand free electron model
		CO3	Familiarize with band theory of semi conductors
		CO4	Understand dielectric properties of materials
PY1442	**Basic Physics Lab 1**	**CO1**	Practical knowledge on the concepts learned about oscillations,waves and properties of matter
		CO2	Familiarize with the precautions andsteps of systematic recording of an experiment
		CO3	Understand multiple experimental techniques for determining physical quantities.
		CO4	Develop skill in setting up of apparatus for accurate measurement of physical quantities
PY1645	**Advanced Physics Lab 2**	**CO1**	Practical understanding of ideas learned about Optics, magnetism and electricity
		CO2	Understand how to use a spectrometer

		CO3	Obtain a practical understanding of the refraction of light by a prism
		CO4	Understand the working of different electrical circuits and use it to determine different physical quantities
PY1646	**Advanced Physics Lab 3**	**CO1**	Practical understanding various electronics circuits
		CO2	Understand the working of PN junction diodes, Zener diodes and their applications
		CO3	Understand the working of transistors and their applications
		CO4	Understand the working of operational amplifiers and their circuits
		CO5	Understand C++ programming and apply it to find the solution to different physical problems

NAME OF THE PROGRAMME:COMPLEMENTARY COURSE IN PHYSICS FOR FIRST DEGREE PROGRAM IN MATHEMATICS

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
PY 1131.1	**Mechanics and properties of matter**	**CO1**	Recognize the Rotational dynamics of rigid bodies of different shapes and their applications
		CO2	Understand the concepts of moduli of elasticity and their applications
		CO3	Explain the properties of fluids such as surface tension and viscosity and their applications with examples
		CO4	Understand the properties of liquids
SEMESTER II			
PY1231.1	**Thermal Physics and statistical mechanics**	**CO1**	Distinguish the various process of heat transmission
		CO2	Recognize the different thermodynamic processes
		CO3	Obtain the concept of entropy and apply it to physical situations
		CO4	Identify different statistical distribution
SEMESTER III			
PY1331.1	**Optics, Magnetism and Electricity**	**CO1**	Differentiate the optical phenomena - interference and diffraction -Newton's rings, air wedge and diffraction grating
		CO2	Explain the principle behind the experiments.
		CO3	Explain the production of ac and its characteristics and also about ac circuits
		CO4	Attain knowledge about the theory of magnetism
SEMESTER IV			

PY1431.1	**Modern Physics and Electronics**	**CO1**	Recognize different atomic models Understand
		CO2	Identify radioactive process and its applications
		CO3	Understand the concepts Quantum Mechanics, Planck's hypothesis and applications
		CO4	Obtain the theoretical concept of working of various electronic circuits

NAME OF THE PROGRAMME:COMPLEMENTARY COURSE IN PHYSICS FOR FIRST DEGREE PROGRAM IN CHEMISTRY

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
PY 1131.2	**Rotational dynamics and properties of matter**	**CO1**	Recognize the Rotational dynamics of rigid bodies of different shapes and their applications
		CO2	Understand the concepts of moduli of elasticity and their applications
		CO3	Explain the properties of fluids such as surface tension and viscosity and their applications with examples
		CO4	Understand the properties of liquids
SEMESTER II			
PY 1231.2	**Thermal Physics**	**CO1**	Distinguish the various process of heat transmission
		CO2	Recognize the different thermodynamic processes
		CO3	Obtain the concept of entropy and apply it to physical situations
		CO4	Identify different statistical distribution
SEMESTER III			
PY1331.2	**Optics,Magnetism and Electricity**	**CO1**	Differentiate the optical phenomena - interference and diffraction -Newton's rings, air wedge and diffraction grating
		CO2	Explain the principle behind the experiments.
		CO3	Explain the production of ac and its characteristics and also about ac circuits
		CO4	Attain knowledge about the theory of magnetism
SEMESTER IV			
PY1431.2	**Atomic physics,Quantum mechanics and Electronics**	**CO1**	Recognize different atomic models Understand

		CO2	Identify radioactive process and its applications
		CO3	Understand the concepts Quantum Mechanics, Planck's hypothesis and applications
		CO4	Obtain the theoretical concept of working of various electronic circuits

NAME OF THE PROGRAMME:COMPLEMENTARY COURSE IN PHYSICS FOR FIRST DEGREE PROGRAM IN STATISTICS

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
PY 1131.3	**Mechanics and properties of matter**	**CO1**	Recognize the Rotational dynamics of rigid bodies of different shapes and their applications
		CO2	Understand the concepts of moduli of elasticity and their applications
		CO3	Explain the properties of fluids such as surface tension and viscosity and their applications with examples
		CO4	Understand the properties of liquids
SEMESTER II			
PY 1231.3	**Thermal Physics and statistical mechanics**	**CO1**	Distinguish the various process of heat transmission
		CO2	Recognize the different thermodynamic processes
		CO3	Obtain the concept of entropy and apply it to physical situations
		CO4	Identify different statistical distribution
SEMESTER III			
PY1331.3	**Optics,Magnetism and Electricity**	**CO1**	Differentiate the optical phenomena - interference and diffraction -Newton's rings, air wedge and diffraction grating
		CO2	Explain the principle behind the experiments.
		CO3	Explain the production of ac and its characteristics and also about ac circuits
		CO4	Attain knowledge about the theory of magnetism
SEMESTER IV			

PY1431.3	**Modern Physics and Electronics**	**CO1**	Recognize different atomic models Understand
		CO2	Identify radioactive process and its applications
		CO3	Understand the concepts Quantum Mechanics, Planck's hypothesis and applications
		CO4	Obtain the theoretical concept of working of various electronic circuits

NAME OF THE PROGRAMME: FIRST DEGREE PROGRAMME IN STATISTICS

SPECIFIC PROGRAMME OUTCOMES

PSO1 Demonstrate the ability in collection, presentation, analysis and interpretation of data.

PSO2 Understand and solve problems in correlation and regression, probability and statistical distributions.

PSO3 Understand and apply theories of statistical inference involving estimation of parameters and testing of hypothesis.

PSO4 Understand and apply the techniques used in design of experiments, statistical quality control.

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
ST 1141	**Statistical Methods I**	**CO 1**	Describe origin and meaning of Statistics, its uses and relation with other disciplines and its limitations and misuses

		CO 2	Describe methods of collection of primary data and sources of secondary data
		CO 3	Design a questionnaire and a schedule, Classify and tabulate data
		CO 4	Diagrammatically represent data through line diagram, bar diagrams, pie diagrams, pictograms, cartograms and graphically represent frequency distribution by frequency polygon, frequency curve and ogives
		CO 5	Learn measures of central tendency and measures of dispersion, describe their properties
		CO 6	Learn moments , skewness and kurtosis and learn various measures of them
SEMESTER II			
ST 1241	**Statistical Methods – II**	**CO1**	Describe the concept of correlation and compute Karl Pearson's correlation coefficient and Spearman's rank correlation coefficient.
		CO2	Discuss partial and multiple regressions for three variables.
		CO3	Describe the concepts of curve fitting.
		CO4	Fit the regression equations using the method of least squares.
		CO5	Describe data mining and data warehousing.
		CO6	Define data mining models and algorithms.
SEMESTER III			
ST 1341	**Probability and Distributions – I**	**CO1**	Describe random experiment, sample space, events, and types of events.
		CO2	Describe various definitions of probability, conditional Probability and multiplication theorem, and their applications in problem solving

		CO3	Learn the concept of geometric probability
		CO4	Describe univariate random variables in Discrete as well as in continuous cases, distribution function, probability mass function and probability density function, apply their properties in problem solving
		CO5	Describe bivariate random variable, joint distribution function, joint probability mass function, marginal and conditional distributions, independence of random variables and apply their properties in problem solving
		CO6	Describe functions of random variables both in univariate and bivariate cases, transformations of random variable and apply the concepts in problem solving
		CO7	Describe mathematical expectation, expectation of function of random variables (up to bivariate case) and apply its properties in problem solving
SEMESTER IV			
ST 1441	**Probability and Distributions – II**	**CO1**	Describe the univariate discrete distributions- Degenerate, Bernoulli, Binomial, Poisson, Geometric and Hyper geometric.
		CO2	Define multinomial distribution and its properties.
		CO3	Describe the univariate continuous distributions-Uniform, Triangular, Gamma, and Beta 2 types, Exponential, Normal, Lognormal and Cauchy.
		CO4	Explain the concepts of multivariate normal distribution.
		CO5	Derive the marginal and conditional distribution of bivariate normal distribution.

SEMESTER V			
ST 1541	**Limit Theorems and Sampling Distributions**	**CO1**	Understand the convergence of a sequence of events.
		CO2	Explain the laws of large numbers.
		CO3	Apply Chebychev's inequality and central limit theorem.
		CO4	Describe central and non-central sampling distributions.
		CO5	Make use of tables of $\chi 2$, t and F distributions.
		CO6	Explain the probability distributions of r^{th} order statistic. Probability distributions of 1st and nth order statistic from U (0, θ) and exponential distributions.
ST 1542	**Estimation**	**CO1**	Define the desirable properties of a good estimator.
		CO2	Explain whether an estimator satisfy any of the desirable properties or not.
		CO3	Construct confidence intervals for mean, variance, proportion in a population and difference between means and difference between proportions in two populations.
		CO4	Explain Gauss Markov set up.
		CO5	Illustrate the estimability of a linear parametric function
ST 1543	**Testing of Hypothesis**	**CO1**	Describe the fundamental concepts of testing of hypothesis.
		CO2	State Neyman-Pearson lemma
		CO3	Apply Neyman Pearson's lemma for mean and variance of a normal population, the

			Mean of binomial and Poisson distribution
		CO4	Define most powerful test and UMP test
		CO5	Explain likelihood ratio test and its properties
		CO6	Apply large sample tests and small sample tests.
		CO7	Describe non-parametric test.
ST 1544		**CO1**	Explain the basic concept of sample survey.
		CO2	Distinguish between sample survey and census survey
		CO3	Apply various sampling schemes like SRS, Stratified sampling and Systematic sampling
		CO4	Compare the efficiencies of estimates obtained using different sampling techniques.
		CO5	Describe the merits and demerits of different sampling techniques
		CO6	Obtain the estimates for population mean using Ratio and Regression estimators, and compare their efficiencies
ST 1551.1	**Statistics and Research Methodology (Open Course)**	**CO1**	Explain the concepts & objectives of research and formulation of research process
		CO2	Describe the role of statistics in research
		CO3	Organize and present the data collected.
		CO4	Design a questionnaire & conduct sample survey
		CO5	Explain basic concepts of testing of hypothesis
		CO6	Explain the methods of writing research reports.

SEMESTER VI			
ST 1641	**Design of Experiments and Vital Statistics**	**CO1**	Carry out one-way and two-way analysis of variances.
		CO2	Explain the basic concepts and principles of experimental design.
		CO3	Carry out the analysis of CRD, RBD and LSD.
		CO4	Carry out analysis in RBD and LSD with one or two missing observations.
		CO5	Carry out the analysis of 2^2 and 2^3 factorial experiments
		CO6	Compute various measures of fertility, mortality and population growth. Construct life tables.
ST 1642	**Applied Statistics**	**CO1**	Identify the various index numbers and compute them for data sets
		CO2	Explain the concepts of base shifting, splicing and deflation of index numbers, consumer price index number.
		CO3	Explain the component of time series and estimate trend and seasonal effect.
		CO4	Explain the roles and responsibilities of various organizations.
		CO5	Explain the methods of data collection and dissemination in population census
		CO6	Explain the methods of estimation of National Income
ST 1643	**Operations Research and Statistical Quality Control**	**CO1**	Explain the evolution and significance of OR
		CO2	Describe the concept of OR
		CO3	Solve LPP using graphical method and simplex method
		CO4	Solve LPP using Big M method and Two-phase method

		CO5	Explain the concept of SQC and mention its application
		CO6	Construct control chart for variables and attributes
		CO7	Describe acceptance sampling plans
ST 1661.3:	**Inventory Control and Queuing Theory (Elective Course)**	**CO1**	Describe inventory control and cost associated with inventories
		CO2	Explain Economic order quantity (EOQ)
		CO3	Solve Deterministic Inventory problem with and without shortages
		CO4	Discuss probabilistic inventory Control
		CO5	Explain Newspaper boy problem
		CO6	Discuss the basic concepts of queuing theory
		CO7	Derive the steady state solution of M/M/1 queue model , Illustrate cost models in queuing

NAME OF THE PROGRAMME: COMPLEMENTARY COURSE IN STATISTICS FOR FIRST DEGREE PROGRAM IN MATHEMATICS

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
ST 1131.1:	**Descriptive Statistics**	**CO1**	Explain the concepts of statistical surveys, sampling, census and various sampling methods like simple random sampling, systematic sampling, and stratified sampling.
		CO2	Design questionnaires and carry out surveys.
		CO3	Collect and present raw data using frequency tables as well as appropriate graphs.
		CO4	Summarize data using various measures of central tendency, dispersion, skewness and kurtosis.
		CO5	Explain the concepts of scatter diagram, correlation and calculate the correlation between two variables.
		CO6	Explain the concept of regression, fit various regression equations to given data sets and predict values of response variables.
		CO7	Explain various concepts associated with the two regression lines and identify the regression lines for given data sets
SEMESTER II			
ST 1231.1:	**Probability and Random Variables**	**CO1**	Distinguish between random and non-random experiments.
		CO2	Evaluate the probabilities of events using classical, statistical and axiomatic approaches.
		CO3	Identify independent events; calculate conditional probability and application of Bayes' theorem.
		CO4	Distinguish between discrete and continuous random variables with its probability distributions.

		CO5	Assess the independence of random variables.
		CO6	Calculate moment generating function and characteristic function.
		CO7	Determine the conditional mean and variance of a random variable.
		CO8	Evaluate the correlation between two random variables
SEMESTER III			
ST 1331.1:	**Statistical Distributions**	**CO1**	Define various discrete and continuous standard distributions and explain their theoretical properties.
		CO2	Solve numerical problems associated with discrete and continuous standard distributions.
		CO3	Fit binomial, Poisson and normal distributions to data sets and calculate theoretical frequencies.
		CO4	Explain the laws of large numbers and apply them to solve numerical problems
		CO5	Define sampling distributions (normal, chi-square, Students' t and F) and solve elementary numerical problems.
SEMESTER IV			
ST 1431.1:	**Statistical Inference**	**CO1**	Analyze a sample to draw valid inferences about the parameters of a statistical population.
		CO2	Explain the properties of estimators and solve numerical problems for the point and interval estimators of the parameters.

		CO3	Explain the concept of testing statistical hypotheses.
		CO4	Identify two types of errors, compute level of significance and power of a test.
		CO5	Conduct tests for hypothesis about the population mean and proportion using large samples.
		CO6	Conduct tests for hypothesis about the homogeneity and independence using chi-square statistics.
		CO7	Conduct tests for hypothesis about the mean and variance for normal population using small samples.
		CO8	Carry out and interpret ANOVA.

NAME OF THE PROGRAMME:FIRST DEGREE PROGRAM IN CHEMISTRY

SPECIFIC PROGRAM OUTCOMES

PSO1 Develop scientific outlook, scientific attitude and scientific temper and todevelop skill in experimenting, analysing and interpreting data.

PSO2 Develop research attitude and adopt scientific method of identifying,analysing and solving research problems in an innovative way.

PSO3 Apply physical & mathematical theories and principles in the contextof chemicalscience

PSO4 Use chemistry related softwares for drawing structure and plottinggraphs.

PSO5 Identify advances in various branches of Chemistry.

PSO6 Acquire skill in safe handling of chemicals including hazardous materialsand to identifythe ingradients in household chemicals.

PSO7 Predict Analytical procedures, compare experimental, theoretical and graphical methods of analysis

PSO8 Predict reactions mechanisms in organic reactions.

PSO 9 Understand the terms, concepts, methods, and experimental techniques of physical,organic, and analytical Chemistry.

PSO10 Develop critical thinking and adopt healthier attitude towards individual community.

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
CH1141	**Inorganic Chemistry I**	**CO 1**	Understand the diagonal relationships and anormalous behaviour of elements.

		CO 2	To define various scales of electronegativities and their applications.
		CO 3	Discuss the course of development of structure of atom.
		CO 4	Apply rules for filling electrons in classifying elements.
		CO 5	Define effective nuclear charge and slator's rules.
SEMESTER II			
CH1221	**Chemistry-its origin methodology and impacts**	**CO1**	Appreciate the development of scientific theories through years with specific examples.
		CO2	Develop e curiosity and scientific attitude towards the application of chemistry in daily life.
		CO3	Appraise the current development in chemistry.
		CO4	Identify the common ingradients of household synthetic products.
		CO5	Discriminate and classify chemicals used as drugs, explosives.
		CO6	To outline procedures for experimentation.
SEMESTER III			
CH1341	**Inorganic Chemistry II**	**CO1**	Understand various theories of chemical bonding and their limitations.
		CO2	Predicts stability of atoms and the nature of bonding betweenatoms.
		CO3	Discuss various applications of intermolecular interactions.
		CO4	Understand chemistry of glass, silicates and silicones.
		CO5	Discuss Chemistry of Boron compounds, oxy acids and oxides ofPhosphorous.
SEMESTER IV			

CH 1441	**Organic Chemistry I**	**CO1**	Recall the fundamentals of organic Chemistry.
		CO2	Apply the electron displacement effects to compare acidity, basicity and stability of Organic compounds.
		CO3	Judge the reaction mechanism of substitution and elimination on the basis of the structure of alkyl halides.
		CO4	Summerise the chemistry of reaction intermediates.
SEMESTER V			
CH1541	**Physical Chemistry I**	**CO1**	Perform numerical problems of gases under a set of conditions.
		CO2	Determination of colligative properties and molecular mass of solute.
		CO3	Understand the working principle of electrochemical cells.
		CO4	Representation of lattice planes and calculation of interplanar placing, draw the crystal structrures.
CH 1542	**Inorganic Chemistry III**	**CO1**	Discuss the electronic configuration and related properties of transition and innertransition elements.
		CO2	Understand stability of Complexes.
		CO3	Describe isomerism in co-ordination complexes.
		CO4	Discuss spectrochemical series, CFSE and their consequences.
CH 1543	**Organic Chemistry II**	**CO1**	Distinguish primary, secondary and terciary alcohols and ammines.
		CO2	Write reaction steps, interconversion of aldose and ketose, chain lengthening and shortening of aldoses.
		CO3	Explain the structure of glucose, fructose, sucrose, starch and cellulose.
		CO4	Describe the use of Organic reagents in synthesis.

CH 1551.2	**Fundamentals of Chemistry and its application to everyday life (Open Course)**	**CO1**	Appreciate the evolution of Science and Chemistry and the early form of Chemistry
		CO2	Understand the development of Chemistry as a discipline and the role of Chemistry as a central science
		CO3	Discuss the fundamental properties of atom,structure of atom, classification of elements in to a perodic table
		CO4	Differentiate between simple molecules and giant molecules and the bonding nature
		CO5	Explain different types of bonding and predict stability
		CO6	Compare properties of graphite and diamond and their structural differences
		CO7	Identify house hold chemicals, their advantages and disadvantages
		CO8	Become aware of chemical hazards and the precautions in handling chemicals
		CO9	Beware of food adulterants
		CO10	Critically select chemical fertilizers, artificial sweeteners,beverages and food preservatives
SEMESTER VI			
CH 1641	**Physical Chemistry II**	**CO1**	Understand basic concepts of thermodynamics, spectroscopy group theory.differentiation
		CO2	Discuss basic concepts of statistical thermodynamics.
		CO3	Apply laws of thermodynamics.
		CO4	Classify processes, properties on a thermodynamic basis.
CH 1642	**Organic Chemistry III**	**CO1**	Outline the chemistry of simple heterocyclic compounds.
		CO2	Classify aminoacids, proteins, drugs, terpenes.

		CO3	Discuss the synthesis of peptides, drugs and polymers.
		CO4	Explain the mechanism and techniques of polymerisation.
CH 1643	**Physical Chemistry III**	**CO1**	Recall the basic physical concepts in Quantum mechanics, colloids and adsorption.
		CO2	Derive and interpret important theories in physical chemistry.
		CO3	Perform calculations involving physical concepts.
		CO4	Understand terminology in chemistry.
		CO5	Analyse graphical representations.
		CO6	Demonstrate the origin of Quantum noumbers.
CH 1651.1	**Supramolecular, Nano Particles and Green Chemistry**	**CO1**	Become aware of pollution caused by industries
		CO2	Recognize the principles of nano and green and necessity of green approaches to protest nature and get motivated to more eco-friendly life style
		CO3	Discuss about sustainable development and logical use of natural resources
		CO4	Realises the concepts of supramolecular chemistry and its applications, importance of microscale approaches and nano material research

NAME OF THE PROGRAMME:COMPLEMENTARY COURSE IN CHEMISTRY FOR FIRST DEGREE PROGRAM IN PHYSICS

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
CH 1131.1	**Theoretical and analytical chemistry**	**CO1**	Discuss the rules for filling electrons in atomic orbitals.
		CO2	Correlate stability of atom with electronic configuration.
		CO3	Predict geometry of molecules.
		CO4	Discuss theories of Chemical bonding.
		CO5	Predict spontaneity of reactions.
		CO6	Recognise fundamentals of thermodynamics.
SEMESTER II			
CH 1231.1	**Physical and industrial chemistry**	**CO1**	Apply Hess's law for Thermochemical calculations.
		CO2	Suggest method for determination of PH
		CO3	Discuss petrochemicals and applications.
		CO4	. Credit methods of concentrations, extraction of metals from their ores.
		CO5	Discuss the applications of van arkel method.
		CO6	Consumption of natural resources.
		CO7	Predict geometry of molecules.
		CO8	Use of solar energy.
SEMESTER III			
CH 1331.1	**Physical Chemistry II**	**CO1**	Discuss electrochemical cells.
		CO2	Draw unit cells and structure of crystals.
		CO3	Understand effect of temperature on molecular velocities.
		CO4	Calculate cell emf.
		CO5	Constructs electrochemical cells.

		CO6	Classify between photochemical reactions.
		CO7	Relate electrolyte concentrations with emf.
		CO8	Apply the principles of physical chemistry in catalysis.
SEMESTER IV			
CH1431.1	**Spectroscopy and Advanced materials**	**CO1**	Illustrate isomerism in coordination complexes.
		CO2	Solve numerical problems in nuclear chemistry.
		CO3	Appreciate the use of biodegradable polymers.
		CO4	Apply the importance of energy and environment conservation.
		CO5	Get insight to the emerging area of nano and advanced materials.
		CO6	Use of coordination compounds in analysis

NAME OF THE PROGRAMME:COMPLEMENTARY COURSE IN CHEMISTRY FOR FIRST DEGREE PROGRAM IN BOTANY

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
CH 1131.3	**Analytical and environmental Chemistry**	**CO1**	Discuss Bohr atom model and represent electronic configuration of elements.
		CO2	Predict structure of simple molecules based on the concept of hybridisation.
		CO3	Identify hydrogen bonding in relation to physical and chemical properties.
		CO4	List the various chemical bonds.
		CO5	Apply the VSEPR theory to explain the geometry of the molecules.
		CO6	Discuss the theory of volumetric analysis.
		CO7	Become aware of threat of chemical pollutants air, water and soil.
SEMESTER II			
CH 1231.3	**Inorganic and Bioinorganc Chemistry**	**CO1**	Understand the bilogicalnd environmental aspects of organic compounds.
		CO2	Comprehend the meaning of stability of molecules.
		CO3	Summarise the application of radioactivity.
		CO4	Predict the properties of transition metal complexes.
		CO5	Apply complexation reactions in qualitative and quantitative analysis.
SEMESTER III			
CH1331.3	**Physical Chemistrty**	**CO1**	Classify the reactions on the basis of order and molecularity.

		CO2	Understand the effect of temperature on reaction rates.
		CO3	Understand the theories of catalysis.
		CO4	Understand the properties of colloids.
SEMESTER IV			
CH 1431.3	**Organic Chemistry**	**CO1**	Discuss the applications of chromatography and electrophoresis.
		CO2	Classify amino acids, proteins, carbohydrates.
		CO3	Summarise the concept of optical isomerism
		CO4	Reaction of amino acids.
		CO5	Discuss extraction process of natural products.
		CO6	Reaction of carbohydrates.
		CO7	Categorise crude drugs.
		CO8	Method of evaluating crude drugs.

NAME OF THE PROGRAMME:COMPLEMENTARY COURSE IN CHEMISTRY FOR FIRST DEGREE PROGRAM IN ZOOLOGY

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
CH 1131.4	**Theoretical chemistry**	**CO1**	Differentiate particle nature and wave nature of matter.
		CO2	Associate wave concept with microscopic matter.
		CO3	Apply VSEPR theory.
		CO4	Describe various types of chemical bonds.
		CO5	Understand periodic classification of elements
		CO6	Comprehend different segments of titrations, Apply the principles of colorimetry to estimate ions and elements,
		CO7	Recognize the factors affecting environment and solution for it.
SEMESTER II			
CH 1231.4	**Inorganic Chemistry**	**CO1**	Understand the biological and environmental aspects of organic compounds.
		CO2	Comprehend the meaning of stability of nucleus.
		CO3	Application of radioactivity.
		CO4	Properties of transition metal complexes.
SEMESTER III			
CH1331.4	**Organic Chemistry**	**CO1**	Classify carbohydrates, aminoacids, proteins,lipids.
		CO2	Understand the structure of proteins.
		CO3	Synthesis of amino acids, proteins, peptide,drugs.
		CO4	Summarize optical, geometrical isomerism
SEMESTER IV			
CH1431.4	**Physical Chemistry**	**CO1**	Classify reactions on the basis of order and molecularity.

		CO2	Discuss different concepts of acids and bases.
		CO3	Calculate rate and order of reactions.
		CO4	Understand different techniques used for the study of colloids.
		CO5	Understand concepts of colloids.
		CO6	Review the principles underlying the working ofsophisticated instuments.

NAME OF THE PROGRAMME:FIRST DEGREE PROGRAM IN BIOTECHNOLOGY

PROGRAM SPECIFIC OUTCOMES

PSO1: Develop basic understanding of the various streams of biotechnology. Apply the knowledge in the modern areas of biotechnology such as medical science, environment, agriculture, industry, proteomics, genomics, metabolomics, bioinformatics, nanobiotechnology etc.

PSO2: Understand biotechnology and its power in developing the nation, and to create awareness about biotechnology that will help in eliminating public fear about the contribution of biotechnology and confusion on GM crops, GM foods and transgenic organisms etc. Enhance practical skills and competency to conduct experiments in biotechnology.

PSO3: Understand the basic concepts of biotechnology and other interdisciplinary areas. Group project helps in creating analytical thinking and interpreting the inference.

PSO4 : Pursue higher studies in Biotechnology and contribute significantly in its development. Inculcate skill to organize scientific events and effective communication. Ascertain their area of interest in research.

COURSE OUTCOME (CO) FOR BIOTECHNOLOGY CORE COURSES FOR MULTIMAJOR BIOTECHNOLOGY PROGRAM

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
BV 1121	**Methodology and Perspective of Biotechnology**	**CO1**	The students will be able to understand how science works

		CO2	Students will learn how to apply statistics and IT in Biological science
		CO3	They will receive a general awareness about biotechnology and its application in various fields.
		CO4	The students will acquire knowledge on safety and ethics in biotechnology
BV1143	**Biochemistry & Metabolism**	**CO1**	The students will be able to describe the biochemical basis of life and basic understand about the biochemical reactions The course will impart a basic understanding about the concept of the biochemical basis of phenomenon life and metabolic reaction of cells that are essential for the sustenance of life.
		CO2	Students should learn about the various bio molecules and its functions in the cellular metabolism. It specially focuses on the development of analytical skills in biochemistry by giving more importance to thelaboratory experiments of biochemistry
		CO3	They will get an understanding about the basic concepts of

			energy transactions of the biological systems
		CO4	The students will acquire knowledge on bioenergetics,molecular biology and various applications of biomolecules and its productions and use as medicines and food supplements
SEMESTER II			
BV 1221	**Biophysics & Instrumentation**	**CO1**	The students will be able to understand the fundamentals of biophysics
		CO2	Students will learn sophisticated instrumental techniques used in biotechnology
		CO3	They will get an understanding of molecular interactions
		CO4	The students will acquire knowledge on working principles and applications of microscopy and autoradiography
BV1245	**Microbiology**	**CO1**	The students will be able to understand the structure and classification of microorganisms
		CO2	Students will learn sterilisation techniques used in microbiology.
		CO3	They will get an understanding of bacterial genetics and

			recombination mechanisms
		CO4	The students will acquire knowledge on industrial applications of microorganisms
BV 1246	**Biotechniques I (Practical of BV1143 BV1245)**	**CO1**	This course is the practical of the course BV1143 Biochemistry & Metabolism and BV1245 Microbiology.
		CO2	The course will impart the students hands on training on the analytical techniques and experiments of Biochemistry and Microbiology
		CO3	They will get an understanding of principles of various experimental protocols and laboratory procedures and safety measures.
		CO4	The students will acquire knowledge on industrial applications of biochemistry & Microorganisms which are the core components of Biotechnology experiments
SEMESTER III			
BV 1344	**Food and Industrial Biotechnology**	**CO1**	The students will be able to understand the potential of Food and Industrial biotechnology
		CO2	Students will learn industrial applications

			of Food Biotechnology and Bioprocess technology.
		CO3	They will be trained to understandthe commercialimportance of Biotechnology
		CO4	The students will acquire knowledge on career opportunities in industries R&D
BV 1345	**Molecular Biology**	**CO1**	The students will be able to understand the scope and importance of Molecular Biology
		CO2	Students will be able to learn structure, function, regulation of gene
		CO3	They will be trained to understand the molecular basis of life
		CO4	The students will gain a very essential foundation for the proper understanding of life at molecular level, which is essential for further studies related to genetic engineering, immunology and other modern applied aspects of biology.
SEMESTER IV			
BV 1446	**Recombinant DNA Technology**	**CO1**	The students will beable to understand basics of genemanipulation methods and principles
		CO2	Students will be able to understand special features of tools

			neededgenetic engineering procedures
		CO3	They will be trained to understand the construction of a recombinant DNA
		CO4	The students will gain a very essential understanding of the tools needed for the analysis and identification of a gene and bio safety and ethics in genetic engineering
BV 1447	**Immunology**	**CO1**	The students will be able to understand basics of immune system, immune response and immunology related techniques
		CO3	They will be trained to understand antibody structure and function, and antibody diversity
		CO4	The students will acquire knowledge on immunological techniques and its implications in disease diagnosis
BV 1448	**Biotechniques II (Practical of BV1344, BV1345, BV1446, BV1447)**	**CO1**	Outline the fundamental steps in a genetic engineering procedure
		CO2	Explain the usefulness of plasmid preparations, how they are performed, and how the concentration and

			purity of plasmid samples can be determined.
		CO3	Hands on training in nucleic acid extraction and purification
		CO4	To show the main microbiological processes those are used in the biotech industry.
SEMESTER V			
BV 1544	**Environmental Biotechnology**	**CO1**	The students will be able to understand the application of biotechnology in keeping the environment clean and healthy and application of biotechnology in energy production
		CO2	Students will learn about ecosystem, biodiversity
		CO3	They will be trained to understand Pollution types ,sources of pollution, general characteristics of pollutants and controlling measures and biological methods of degradation of pollutants
		CO4	The students will acquire knowledge on renewable energy sources especially

			biomass energy and other biological methods
BV 1545	**Plant Biotechnology & Animal Biotechnology**	**CO1**	The students will be able to understand the basic knowledge in the applied aspects of plant biotechnology and animal biotechnology for the improvement of agriculture and plant based and animal based industries.
		CO2	Students will learn about fundamentals of plant tissue culture
		CO3	They will be trained to understand the various techniques of animal cell culture, cloning and tissue culture of plants and animals
BV1552	**OPEN COURSE - Food & Diary Biotechnology**	**CO1**	The students will be able to understand the basic knowledge in the applied aspects of food microbiology and importance of fermented foods
		CO2	Students will learn about food spoilage and causative agents of food spoilage
		CO3	They will be trained to understand principles of food preservation and various methods of preservation techniques
		CO4	The students will acquire knowledge on different kinds of

			fermented dairy , meat products etc.
SEMESTER VI			
BV 1663.2	**Food & Diary Biotechnology**	**CO1**	The students will be able to understand the basic knowledge in the applied aspects of food microbiology and importance of fermented foods
		CO2	Students will learn about food spoilage and causative agents of food spoilage
		CO3	They will be trained to understand principles of food preservation and various methods of preservation techniques
		CO4	The students will acquire knowledge on different kinds of fermented dairy , meat products etc.
BV 1651	**Biotechniques III (Practical of BV1544 and BV1545)**	**CO1**	Explain the basics, methodology and applications of plant tissue culture.
		CO2	Become familiar with sterile techniques, media preparation, DNA extraction methods, gene isolation and nucleotide sequence analysis

		CO3	Understanding the various types of ecosystems, biodiversity components, environmental threats and Policy.

COURSE OUTCOME (CO) OF BOTANY CORE COURSES FOR BIOTECHNOLOGY PROGRAM

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
BV 1141.1	**Microtechnique, Angiosperm Anatomy, Reproductive Botany and Palynology**	**CO1**	The course is aimed to bring the basic concept
		CO2	understanding about the simple basics of microtechnique and also the concept and understanding of anatomy of the flowering plants and its relationship to the physiology and environmental adaptability of the plants.
		CO3	It also gives a basic idea on their production and development of the flowering plants and its adaptation to suit to its environment.
SEMESTER II			
BV1241.1	**Environmental studies**	**CO1**	Students should acquire a basic understanding about the structure function of the environment and its interaction with the living systems.
		CO2	It will impart the geographical distribution of plants and the impact of human intervention in the environment and the delicate balance of various factors in the environment.
		CO3	It gives an idea about the various types of biodiversity and the influence of environmental pollution on the biodiversity

SEMESTER III			
BV1341.1	**Phycology, mycology, lichenology and phytopathology**	**CO1**	Students should be exposedtotheworldofcryptogramsand other lower forms ofplants. They shouldunderstand the variousaspectsofalgae, fungi, lichens.
		CO2	They should be exposed tovarious aspects of algae, itsclassificationand economic importance.
		CO3	Students should understandabout Lichens and itsmorphologyandstructure.
		CO4	They should understand theimportanceoflowerformsofplants and their economicimportanceanddiseases causedbythem.
BV1342.1	**Bryology,pteridology,gymnosperms and palaeobotany**	**CO1**	This course will helpstudents to understand aboutthe lower plants and itsclassification.
		CO2	They will learn theclassification,morphology,anatomy and life cycle ofBryophytes, PteridophytesandGymnosperms.
		CO3	Its study will equip thestudents to learn and to getproper understanding of theBiosphere and about thelowerplants
		CO4	It also imparts theimportance of these plants inthe ecosystem and itstaxonomic and evolutionaryrelation with other plants inthe Biosphere with the studyoffossilplants.
SEMESTER IV			
BV1441.1	**Plant physiology**	**CO1**	The course should give the fundamentals about the biophysical and biochemical aspects on the functioning of the plant system.

		CO2	Students should learn the functions of various plant system through very specific experiments, which are very important to understand the basis of life activities.
		CO3	It should prepare the students pursue higher studies in plant science as well as in Biotechnology.
BV1442.1	**Cell biology, plant breeding & evolutionary biology**	**CO1**	Students have a better understanding of cell structure and cell organelles
		CO2	Prepare microslides of cell divisions and identify various stages of mitosis and meiosis
		CO3	Able to workout problems in classical genetics, modified mendelian ratios and population genetics
		CO4	Able to understand genetic diseases and their inheritance
		CO5	Understand evolutionary principles, theories and methods of speciation
SEMESTER V			
BV1541.1	**Angiosperm morphology and systematic botany**	**CO1**	Ability to identify different types of inflorescences, flowers and fruits, their arrangement and relative position
		CO2	Familiarization of basic rules of Angiosperm classification and different types of classification.
		CO3	Preparation and maintenance of Herbarium.
		CO4	Identification of plants to their respective families

		CO5	Understanding of ethnobotanical and pharmacological significance of plants.
BV1542.1	**Economicbotany, ethnobotany &medical botany**	**CO1**	Identification of plants to their respective families.
		CO2	Understanding of ethnobotanical and pharmacological significance of plants.
SEMESTER VI			
BV1641.1	**Genetics**	**CO1**	Able to workout problems in classical genetics, modified mendelian ratios and population genetics
		CO2	Able to understand genetic diseases and their inheritance
		CO3	Understand evolutionary principles, theories and methods of speciation
BV1643.1	**Mushroom cultivation and marketing**	**CO1**	Identify mushrooms, structure and mode of propagation
		CO2	Understand commercial mushroom cultivation, marketing and theirnutritional value
		CO3	Better understanding of methods of processing and storage of mushrooms

COURSE OUTCOME (CO) OFCHEMISTRY CORE COURSES FOR BIOTECHNOLOGY PROGRAM

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
BV 1142	**Inorganic Chemistry -1**	**CO1**	Discuss the rules for filling electrons in atomic orbitals.

		CO2	Correlate stability of atom with electronic configuration.
		CO3	Predict geometry of molecules.
		CO4	Discuss theories of Chemical bonding.
		CO5	Recognise Nuclear reactions.
		CO6	Understand various solvents.
SEMESTER II			
CH 1231.1	**Physical and industrial chemistry**	**CO1**	Understand Applications of Nanomaterials.
		CO2	Suggest methods of Extraction of Lanthanides.
		CO3	Discuss importance of Organometallic compounds and their applications.
		CO4	Understand 18 electron Rule.
		CO5	Discuss the applications of Nuclear Chemistry.
		CO6	Consumption of natural resources.
		CO7	Familiarise instrumental method of Analysis.
		CO8	Use solvents in chemical reactions.
SEMESTER III			
BV1343	**PhysicalChemistry I**	**CO1**	Students will learn the different states of matter – solid, liquid and gas : and various theories dealing with properties and behaviour of the molecules and atoms
		CO2	They should learn the principles of Thermodynamics and group theory related to chemical reactions.
		CO3	Upon course completion, the student will be able to familiarizes with the important topics like

			defects in crystals and point groups of molecules like water
		CO4	Students become aware of the different states of matter, liquid crystals, basics of group theory and thermodynamic properties like entropy, enthalpy and free energy.
SEMESTER IV			
BV1444	**PhysicalChemistry II**	**CO1**	The course will introduce the basics of the developing fields such as spectroscopy, quantum mechanicsand statistical thermodynamics.
		CO2	The course will make the students aware of the different states of matter and various theories dealing with properties and behaviour of the molecules
		CO3	Students should brcome the aware of quantum mechanics, statistical thermodynamics and its importance in chemistry
		CO4	Upon course completion, the student will be able to familiarize with the principles of spectroscopic and non-spectroscopic methods of studying molecules and adsorption phenomena. And its application in understanding the properties of molecules.
SEMESTER V			
BV1543	**Organic Chemistry I**	**CO1**	To learn the basics of Organic chemistry with its various branches. It should impart the basics of hybridisation and various types of reagents

		CO2	The course will give basic idea about aromatic compounds and make the students aware of Arenes and aromaticity
		CO3	To understand the basic chemistry of aliphatic and aromatic compounds and substituted compounds
		CO4	Describe the behaviour of aliphatic and aromatic compounds like aromatic aldehydes, ketones and halides. Mechanism of reactions of organic compounds and hybridization.
SEMESTER VI			
BV1643	**Organic Chemistry II**	**CO1**	Describe the isolation and structure of terpenes and alkaloids
		CO2	Classify polymers, amino acids, proteins, nucleic acids, vitamins, dyes, enzymes, hormones, oils and fats
		CO3	Discuss the principle of UV, IR, NMR and Mass Spectrometry and interpret the structure of simple molecules
		CO4	Predict the outcome and mechanism of simple organic reactions and rearrangements
		CO5	Discuss the synthesis and reactions of organic Nitrogen and Sulphur Compounds

M.S.M College of Arts and Science, Kayamkulam

(Affiliated to University of Kerala, Thiruvananthapuram)

PROGRAM OUTCOMES, PROGRAMME SPECIFIC OUTCOMES AND

COURSE OUTCOMES OF POST GRADUATE PROGRAMMES

POST GRADUATE PROGRAMMES –MA/MSc/MCom

PO1	**Critical Thinking**: Apply theoretical knowledge to make a critical analysis, intervene using innovative frameworks and evaluate and follow up.
PO2	**Lifelong Learning**: Demonstrate a degree of mastery over the area as per the specialization of the program.
PO3	**Communication**: Speak, read, write and listen clearly in person and through electronic media in English/language of the discipline, and make meaning of the world by connecting people, ideas, books, media and technology.
PO4	**Research Skill**: To provide them with the skills and knowledge to work towards a research degree in an area of their choice
PO5	**Environment and Sustainability:** Understand the impact of technology and business practices in societal and environmental contexts, and sustainable development.
PO6	**Social Interaction:** Elicit views of others, mediate disagreements and help reach conclusions in group settings.
PO7	**Problem Solving**: Apply rigorous, analytic, highly numerate approach to analyze, execute tasks and solve problems in daily life and at work
PO8	**Computational Thinking:** Understand data-based reasoning through translation of data into abstract concepts using computing technology-based tools.

NAME OF THE PROGRAMME: POST GRADUATE PROGRAM IN ENGLISH LANGUAGE AND LITERATURE

PROGRAM SPECIFIC OUTCOMES

PSO1: To demonstrate an understanding of the formal structure of various genres
PSO2: To demonstrate the ability to understand and explain the complexities and subtleties of human experience
PSO3: To develop the necessary research and language skills to do independent and innovative research
PSO4: To show they have understood contemporary pedagogic principles and practices in both language and literature

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COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
EL 211	**Chaucer to the Elizabethan Age**	**CO1**	Provide students with an idea of the major historical events and the socio-cultural contexts that shaped the literature of the fifteenth and sixteenth centuries
		CO2	Develop in students a historical awareness of the evolution of poetry, drama, prose, fiction and literary criticism in English in these two centuries

		CO3	Examine critically the contributions of poets, dramatists, prose writers and critics that marked the singularity of the age
		CO4	Explore the structural/ formal and stylistic features of various representative texts of this Period
EL 212	**Shakespeare Studies**	**CO1**	To give an overview of the socio-political and historical events which were instrumental in patterning Elizabethan consciousness
		CO2	To help students appreciate Shakespeare us a pioneering figure in defining the course of English drama
		CO3	To look into Shakespeare's contributions to enriching the English language
		CO4	To identify the discourses met within the plays and to familiarize the harriers with significant critical responses
EL 213	**The Augustan Age**	**CO1**	Familiarize the students with the major socio-political and literary trends in English literature from the Reformation to the post-Restoration era
		CO2	Evaluate critically the contributions of Augustan writers
		CO3	Introduce the students to the various features of Augustan poetry and Prose
		CO4	Examine the relative similarities and differences between the different types of Restoration drama
EL 214	**Romantics and Victorians**	**CO1**	Understand the socio-cultural, political and intellectual contexts that nourished Romantic and Victorian Literature

		CO2	Evaluate critically the different phases of Romanticism, the change in mood and temper in the Victorian era and the conflict between science and religion at the turn of the century
		CO3	Enable the students to evaluate critically the English mindset in the context of rapid social transformations in the nineteenth century
		CO4	Identify and explain the features of the different kinds of literary texts in terms of the literary movements
SEMESTER II			
EL 221	**From Modernism to the Present**	**CO1**	Familiarize students with the socio-cultural impulses that shaped the twentieth century English society
		CO2	Introduce and examine the various movements that dominated the literature,culture, and arts of the century and which produced significant shifts in the patterns of thought and living
		CO3	Introduce the students to the poets, novelists, dramatists, essayists, prose writers and critics of the age
		CO4	Examine the similarities and differences between the literature of the first and the second half of the centuries
EL 222	**Indian Writing in English**	**CO1**	Enable students to understand the historical and socio-cultural contexts for the emergence of English as a medium for communication and literary expression in India

		CO2	Provide students a perspective on the diverse aspects of Indian Writing in English
		CO3	Enable students to trace the evolution of Indian Writing in English enable students to get an overview of Indian English poetry, prose, drama, novel and short story
		CO4	Help students to develop a general understanding of Indian aesthetics
		CO5	Enable an understanding of the recent trends in Indian Writing in English
EL223	**American Literature**	**CO1**	Understand the socio-political factors that shaped the American literary scene
		CO2	Analytically explore works of prose, poetry, drama and fiction in relation to their historical and cultural contexts
		CO3	Examine the African-American experience as articulated in African-American literature
		CO4	Develop an awareness of the evolving .American experience and character
EL224	**CRITICAL STUDIES**	**CO1**	Represent the important theoretic schools that have radically changed the perception of literature as a cultural phenomena.
		CO2	Familiarize the students with the basic premises of the foundational schools of modern thought, particularly on the construction of the subject,1anguage, and socio-cultural formations.

		CO3	Discuss the intellectual milieu in Europe that led to the emergence of theories of structuralism, post structuralism, psychoanalysis, Marxism and feminism
		CO4	Familiarize the students with the primary conceptual apparatus of these systems of thought enable the students to analyze literary phenomena using the theoretical tools provided by the above schools
SEMESTER III			
EL 231	**Linguistics and Structure of the English Language**	**CO1**	To enable students to get a fundamental understanding of the basic nature, branches, and history of linguistics
		CO2	To attempt a comparison of RP, GIE and Malayalam sounds based on contrastive linguistics
		CO3	To examine the features of language units at the phonological, morphological and syntactical levels
		CO4	To familiarize the students with history and developments of Modern Grammar
EL232	**CRITICAL STUDIES II**	**CO1**	Represent the important theoretic schools that have radically changed theperception of literature as a cultural phenomena.
		CO2	Familiarize the students with the basic premises of the foundational schools of modern thought, particularly on the construction of the subject,1anguage, and socio-cultural formations.

		CO3	Discuss the intellectual milieu in Europe that led to the emergence of theories of structuralism, post structuralism, psychoanalysis, arxism and feminism
		CO4	Familiarize the students with the primary conceptual apparatus of these systems of thought
		CO5	Enable the students to analyze literary phenomena using the theoretical tools provided by the above schools
EL 233.3	**Canadian and Australian Literatures**	**CO1**	Introduce the students to Canadian and Australian Literature
		CO2	Familiarize the students with major literary figures in Canada and Australia
		CO3	Help students understand the socio-cultural contexts that nourish the emergence of these literatures
		CO4	Make them understand the ethnic and cultural diversity of Canada and Australia
		CO5	Interrogate the idea of multiculturalism and national culture
		CO6	Contexualise the emergence of 'Englishes'
EL 234.2	**African and Caribbean Literatures**	**CO1**	Introduce the students to different literary genres from African and Caribbean literature
		CO2	Familiarize them with the historical and cultural context of literary works
		CO3	Help students understand the impact of colonialism, race, class, ethnicity and gender

		CO4	Enable them to gain a broad knowledge of the major texts and major concerns of African and Caribbean literatures
SEMESTER IV			
EL 243.2	**SOUTH ASIAN LITERATURES**	**CO1**	To introduce South Asian Literature as a discipline
		CO2	To introduce history,culture and literature of south asia
EL244.2	**REGIONAL LITERATURE IN ENGLISH**	**CO1**	To introduce the great linguistic and literary diversity of India
		CO2	Enable to cultivate a political sensibility
		CO3	To give a historical awareness of regional literary movements
EL241	**ENGLISH LANGUAGE TEACHING**	**CO1**	Acquire knowledge about current and historical theories of L1 & L2 acquisition
		C02	Assess critically the implications of various approaches, methods and techniques
		CO3	Develop the ability to critically evaluate syllabi, teaching materials and evaluation process
EL242	**CULTURAL STUDIES**	**CO1**	Acquire a critical lens that would help explore cultures of production, consumption, regulation and dissent
		CO2	Analyse the politics of culture and the matrices that constitute myriad cultural imaginations
		CO3	Explore the hegemonic and ideological underpinning of different social imaginations

		CO4	Delineate the possible forms of resistance and politics of subversion

NAME OF THE PROGRAMME: POST GRADUATE PROGRAM IN MALAYALAM

PROGRAM SPECIFIC OUTCOMES

PSO 1. Ability to explore higher learning opportunities and breadth of subjects in Malayalam language and literature.

PSO 2. Acquiring knowledge about different literary forms and updating existing concepts.

PSO 3. Achieving comparative analysis in literature approach.

PSO 4. Acquiring subtlety in the dialectical variety and aesthetic application of language.

PSO 5. Insight into the field of literature and cultural studies.

PSO 6. Able to approach diverse fields of knowledge with interest and develop interdisciplinary analytical skills.

PSO 7. Ability to publish papers in research journals.

PSO 8. Conceptual and aesthetic perspectives are formed.

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
ML211	**Pracheena Malayalam**	**CO 1**	To develop an understanding ofPracheena Malayalam Literature
ML212	**Madhyakala Sahityam**	**CO 1**	To familiarize students with Madhyakala Sahityam/ Literature
ML213	**Keralasamskaram**	**CO 1**	To develop an understanding ofKeralasamskaram
ML 214	**Malayalavyakaranam**	**CO 1**	To familiarize students with the phonological and grammatical structure of Malayalam Language
		CO 2	To generate ability to analyze actual speech in terms of the principle of linguistics
		CO 3	Introduce the students to various forms of speech and writing in Malayalam.
		CO 4	Explore linguistic variations in Malayalam language.
SEMESTER II			
ML 221	**Aadhunika sahityam – Gadyam**	**CO 1**	To familiarize students with Aadhunika Gadya sahityam.
ML222	**Aadunika sahityam – Padyam**	**CO 1**	To generate enthusiasm among students for Aadunika sahityam-Padyam.
ML223	**Bharathiya Kavyamemamsa**	**CO 1**	To learn Bharathiya Kavyamemamsa
ML224	**Sahityameemamsa paschatyam**	**CO 1**	To introduce students to Sahityameemamsa paschatyam.

SEMESTER III			
ML231	**Samakalikasahityam – gadyam**	**CO 1**	To familiarize students with Samakalika Gadya sahityam.
ML232	**Sahityacharitra vijnaneeyam**	**CO 1**	To introduce students to Sahityacharitra vijnaneeyam.
ML233	**Sanskrit paper – 1**	**CO 1**	To enable students to have in-depth knowledge of Sanskrit.
ML234	**Malayala Vimarsanam**	**CO 1**	To introduce students to Malayala Vimarsanam.
SEMESTER IV			
ML241	**Samakalikasahityam – padyam**	**CO 1**	To familiarize students with Samakalika Padya sahityam.
ML242	**Sanskriti paper – 2**	**CO 1**	To further enhance the knowledge in Sanskrit.
ML243	**Aadhunika Bhashashastram**	**CO 1**	To familiarize students with Aadhunika Bhashashastram.
ML244	**Optional paper: Nadodivijnaneeyam**	**CO 1**	To develop an understanding of Nadodivijnaneeyam.
ML245	**Dissertation/ project/ comprehensive viva/Research Methodology**	**CO 1**	To enable students to come up with good-quality Dissertation/ project/ comprehensive viva/Research Methodology works.
		CO 2	Equip students to conduct these.
		CO 3	To develop deep knowledge about Research methodology and practice.

NAME OF THE PROGRAMME: POST GRADUATE PROGRAM IN ARABIC

PROGRAM SPECIFIC OUTCOMES

PSO 1: Equipping the students to handle Arabic language in Real life situations with working knowledge in different walks of life

PSO 2: Preparing them to obtain suitable jobs in the fields of Arabic language, Education. Translation. Media, Management and Hospitality

PSO3: Perfecting the mastery of Arabic language with sufficient knowledge in applied grammar

PSO4: Acquiring proficiency in professional translation &business Arabic 5 Surveying of the Literature and evaluation of Arabic literary thought through various ages

PSO 5: Equipping the learners for devising various critical techniques for literary appreciation

PSO 6: Introducing the students to new literary schools and trends in Arabic literature

PSO 7: Assessing the influence of western literature and culture in the Arabic literature 0 Evaluating the conflicting values of traditionalism and modernism in contemporary Arabic

PSO 8: Understanding literary development as cultural and communicative events in different periods

PSO 9: Evaluating the interface of literature and popular culture, arts, religion, rationalism and politics.

PSO 10: Evaluating different approaches, methods and techniques of language learning

PSO 11: Surveying the development of Arabic Language and Literature in India,

PSO 12: Contributions ofnotable Arabic Institutions, Arabic scholars in India and their works

PSO 13: Examining the development of Arabic Language and Literature in Kerala

PSO15: Studying the concepts of Arabic rhetoric and prosody

PSO 16: Understanding the basic principles and components of Linguistics

PSO 17: Examining different types of critical approaches and the varying trends of literary theories

PSO 18: Estimating the scope of fiction and drama in modem Arabic literature

PSO19: Assessing the influence of Qur'an and Hadith on Arabic Literature

PSO20: Evaluating political and cultural dimensions in the history of Modem Arab World

PSO21: Creating general awareness and knowledge in the areas of Essay Writing, Autobiographical andTravelogue Literature in Arabic

PSO22: Studying different methods of research and analytical techniques.

PSO23: Understanding how to prepare a research paper scientifically

PSO24: Understanding the concept and role of journalism and films in society

PSO25: Studying the evolution of women's writing in Arabic

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
AL 211	**Applied Grammar &Morphology – 1**	**CO1**	Perfecting the mastery of Arabic language with sufficient knowledge in applied grammar and morphology

		CO2	Understanding the unique nature and function of various Arabic structures
		CO3	Familiarization with Arabic grammatical & morphological concepts and Its practical applications
		CO4	Imparting syntactical concepts in a communicative approach
Course II **AI. 212**	**Classical Literature in Arabic**	**CO1**	Understanding literary works and development as cultural and communicative events-different periods. genres and movements, literature and society
		CO2	Surveying of the literature and evaluation of literary thought in Classical Arabic
		CO3	Evaluating the interface of literature and popular culture, arts, religion, nationalism
		CO4	Analyzing the literary creations, authors, movements and trends through Jahiliyya, Islamic & Umayyad periods
		CO5	Estimating the scope of various genes of classical Arabic prose and poetry.
AL 213	**Indian Arabic Literature**	**CO1**	Getting a general awareness on the development of Arabic Language and Literature in India.
		CO2	Analyzing the salient features of Arabic knowledge. Literature & education in India
		CO3	Surveying the contributions of notable Arabic institutions, pioneer Arabic scholars in India and their works
		CO4	Examining the development of Arabic Language and Literature in Kerala

AL 214	**Modern Poetry in Arabic**	**CO1**	Understanding the distinct features of Modern poetry in Arabic
		CO2	Introducing the students to new literary schools and trends in Arabic literature
		CO3	Estimating the sexpe of various genres of Contemporary Arabic poetry
		CO4	Assessing the influence of western literature and culture in the Arabic literature
		CO5	5. Evaluate the conflicting values of traditionalism and modernism in contemporary Arabic
SEMESTER II			
Course V **AL 221**	**Applied Grammar & Morphology – II**	**CO1**	Perfecting the mastery of Arabic language with sufficient knowledge in applied grammar and morphology
		CO2	Understanding the unique nature and function of various Arabic structures
		CO3	Familiarization with Arabic grammatical & morphological concepts and its practical applications
		CO4	Imparting syntactical concepts in a communicative approach
AL 222	**Medieval Literature in Arabic**	**CO1**	Understanding literary works and development as cultural and communicative events- different periods, genres and movements. literature and society
		CO2	A general survey of the literature and evaluation of literary thought in Medieval Arabic

		CO3	Interface of literature and popular culture, arts, religion, nationalism and politics.
		CO4	Analytical and depth knowledge of the literary creations, authors, movements and trends- through various periods
		CO5	Estimating the scope of various genres of Medieval Arabic prose and poetry.
AL 223	**Translation: Theory and Practice**	**CO1**	Introducing the students to the basic concepts of translation
		CO2	Acquiring mastery in employing different translation methods
		CO3	Fahrtzing les finques of translation and language use.
AL 224	**Arabic Rhetoric, Prosody & Linguistics**	**CO1**	1. Understanding the concepts of Arabitethefort and prosoly
		CO2	Acquiring mastery in literary techniques
		CO3	Familiarizing with the differences between literary texts and other plexes of scientific texts
		CO4	Understanding the basic principles and components of linguistics
		CO5	Examining the nature of Arabic as a Semitic language.
SEMESTER III			
AL 231	**Literary Criticism: Theory & Practice**	**CO1**	Understanding the unique nature and function of literature. Examining the different types of critical approaches and the varying trends of literary theories

		CO2	Evaluating literature in objective terms and undertake in-depth studies of different genres of Literature
		CO3	Differentiating the classical and modern literary theories and concepts
		CO4	Evaluation & appreciation of the complex nature of literary study.
AL 232	**Novel & Drama**	**CO1**	Appreciation and analysts of the narrative elements in literature
		CO2	Understanding the basic differences between traditional narration and modern fiction
		CO3	Estimating the scope of fiction and drama in modern Arabic literature
		CO4	Tracing the development of drama and fiction in the Arab world:
AL 233	**Professional Translation & Business Arabic**	**CO1**	Acquiring proficiency in professional translation & business Arabic
		CO2	Estimating the scope of translation as a profession
		CO3	Familiarizing techniques of commercial translation in various fields
		CO4	Getting an in-depth analyst of the ways & means of document translation in Arabic
AL234 C	**Mahjar Literature**	**CO1**	Understanding the distinct features of Mahjar literature in Arabic
		CO2	Introducing new literary schools and trends in American Arabic literature
		CO3	Estimating the scope of various genres of Mahjar literature.
		CO4	Assessing the Influence of western literature and culture in Mahjar literature

		CO5	Evaluating the conflicting values of Mahjar and Arab world writers in Arabic
SEMESTER IV			
AL 241	**History of Contemporary Arab World**	**CO1**	Evaluation the political and cultural dimensions in the history of Modem Arab World
		CO2	Tracing the evolution of the contemporary Arab world.
		CO3	Examining the influence of colonialism in the psych of the Arab world.
		CO4	Assessing how the Palestine issue influenced the course of Arab world.
		CO5	Studying the issues and concerns of the contemporary Arab world
AL 242	**Essay Writing, Autobiography & Travelogue**	**CO1**	1.Creating general awareness and knowledge in the areas of Essay Writing,Autobiographical andTravelogue Literature in Arabic
		CO2	Analyzing the development of Essay Writing, Autobiographical and Travelogue Literature in Arabic
		CO3	Evaluating prominent Arab Writers in the field of Essay. Autobiography and Travelogue
		CO4	Examining major Works in the areas of Essay Writing. Autobiographical and TravelogueLiterature in Arabic
AL 243	**Methodology of Research & Education**	**CO1**	Introducing the basic canons of scientific enquiry and data collection.
		CO2	Studying different methods of research and analytical techniques.
		CO3	Understanding how to prepare a research paper scientifically

		CO4	Imparting experience in understanding various stages of a research work.
		CO5	Understanding the different approaches, methods and techniques of language learning
		CO6	Analyzing contemporary learning theories and concepts and acquire the basic skills.
		CO7	Getting an acquaintance with the recent developments in the curriculum revisions.
		CO8	Examining the content and scope of school curriculum in Arabic language
AL 234 D	**Women's Writing in Arabic**	**CO1**	Studying the evolution of women's writing in Arabic
		CO2	Evaluating the pecultarties of women wrtiers in their literature
		CO3	Assessing the height reached by the women's writing in Arabic
		CO4	Examining the attitude of society towards promoting wornar as a writer
AL 245	**Dissertation & Viva Voce**		It should be about 50 written pages and property bound. The students should be familiar with recent research methodology. The topics of dissertation should he based on Arabic language, Culture, History and Literature. The dissertations should have originality. Translation of work will also be permitted. Every student should have a supervising teacher who handles P.G. Classes. Dissertations in be submitted at the end of Semester IV. The work can be started in Semester Ill. Maximum marks for Dissertation will be 75 and there will be a dissertation viva voce for 25 marks also.

AL 246	**Comprehensive Viva Voce**		There will be a comprehensive Viva Voce at the end of the 4 semester for 100 marks: The Viva Voce examination shall cover the whole syllabus of M. A. Arabic programme.

NAME OF THE PROGRAMME: POST GRADUATE PROGRAM IN COMMERECE

PROGRAM SPECIFIC OUTCOMES

PSO1 :Demonstrate knowledge of key concepts and theories underlying qualitative decision making

PSO2: Compare International markets and environment through the lens of commerce discipline

PSO3:Apply critical and analytical skills and methods to the identification, evaluation and resolution of complex problems

PSO4:Inculcate a global mindset of entrepreneurship and managerial skills.

COURSE OUTCOME (CO)

	COURSE CODE	COURSE NAME	**COURSE OUTCOME**
	SEMESTER I		

CO 211	**Business Ethics and Corporate Governance**	**CO 1**	To convey basic understandings on the theories of Business Ethics
		CO2	To provide a understanding on Corporate Governance practices and the provisions of the Companies Act relating to corporate governance
CO 212	**Legal Framework for Business**	**CO 1**	To enable student acquire updated knowledge and develop understanding of the regulatory framework for business
		CO2	To make students aware of opportunities available in various legal compliances so as to enable them employable.
		CO3	To expose students in emerging trends in good governance practices including governance.
CO 213	**Research Methodology**	**CO1**	To provide an insight into the fundamentals of social science research.
		CO2	To understand the need, significance and relevance of research and research design.

		CO3	To acquire practical knowledge and required skills in carrying out research
CO 214	**Planning and Development Administartion**	**CO1**	To generate an overall insight on planning process in Indian Economy
CO 215	**Advanced corporate Accounting and Reporting**	**CO1**	To acquaint the students about important accounting standards
		CO2	To gain ability to prepare financial statements including consolidated financial statements of group companies and financial reports of various types of entities by applying relevant accounting standards.
		CO3	To expose the students to advanced accounting issues and practices such as insurance Department of Economics claims, investment accounting and liquidation of companies.
SEMESTER II			
CO 221	**E-Business & Cyber Laws**	**CO 1**	To equip the students with the emerging trends in business

		CO2	To equip the students to introduce and explore the use of information technology in all aspects of business.
		CO3	To familiarise with the students cyber world and cyber regulations
CO 222	**Strategic Management**	**CO 1**	To create a conceptual awareness on various strategies.
		CO2	To familiarise students with the formulation, implementation and evaluation of strategies
CO 223	**Quantitative Techniques and Financial Econometrics**	**CO 1**	To impart expert knowledge in the application of Quantitative Techniques and Business Econometrics in research.
		CO2	To impart knowledge in the use of SPSS in processing and analysis of data.
CO 224	**International Business**	**CO1**	To introduce the concept of international business and to create awareness on the changes in the international business arena
CO 225	**Investment Management**	**CO 1**	To provide a general understanding about investment avenues and personal finance.

		CO2	To give a broader understanding about behavioural finance and how it equips to decide personal investment.
SEMESTER III			
CO 231U	**Income Tax Planning and Management**	**CO 1**	To impart deep knowledge about the latest provisions of Income Tax Act
		CO2	To develop application and analytical skill of the provisions of Income Tax Law for Income Tax planning and Management.
CO 232F	**Security Analysis and Portfolio Management**	**CO 1**	To provide a comprehensive understanding on the principles of security analysis and develop the skill in portfolio management.
		CO2	Equip the students to value the real worth of securities
CO 233F	**International Financial Management**	**CO 1**	To familiarise the students with the international financial markets and instruments.
		CO2	To convey an understanding about foreign exchange risk management

CO 234F	**Strategic Cost and Management Accounting**	**CO 1**	To comprehend and familiarize the established techniques, methods and practices in Strategic Cost and Management Accounting to the students.
		CO2	To introduce the evolving Strategic approaches and techniques in Cost and Management field and to developed industrial behaviour among the students in the emerging business areas.
SEMESTER IV			
CO 241 W	**Goods and Service Tax & Customs Duty-Law and Practice**	**CO 1**	To gain expert knowledge of the principles and law relating to Goods and Service Tax and Customs Act.
		CO2	To impart skill in applying and analysing the provisions of Goods and Service Tax Act and Customs Act in handling practical situations.
CO 242 F	**Risk Management and Derivatives**	**CO 1**	To understand the risk management process and its application
		CO2	To give a broader awareness on derivatives and its applications

CO 243F	**Accounting Standards**	**CO 1**	To acquaint the students to understand the structure, process and organizational set up involved in evolving accounting standards in India.
		CO2	To enable the students to apply some key standards while preparing and presenting the financial statements
CO 244S	**Management Optimization Techniques**	**CO 1**	To convey basic principles and application of optimization tools of resource utilization.
		CO2	To provide an insight into optimal project implementation Techniques under deterministic and probabilistic conditions.

NAME OF THE PROGRAMME: POST GRADUATE PROGRAM IN MATHEMATICS

PROGRAM SPECIFIC OUTCOMES

PSO1 .Produce and judge the validity of rigorous mathematical arguments.

PSO2 .Motivate for research in mathematical sciences.

PSO3 .Develop a strong foundation that leads to success in subsequent careers and educational programs.

PSO4 .Develop superior educational quality for students by promoting all aspects of teaching, learning and research mathematics.

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
MM 211	**Linear Algebra**	**CO1**	Recall the basic concepts of matrix theory
		CO2	Understand dimension theorems and apply them to calculate the dimension of a vector.
		CO3	Describe a linear operator on a complex vector space in terms of its generalized eigenvectors.
		CO4	Evaluate Eigen values, Eigen vectors, linear operator, invariant subspaces, upper triangular matrices, diagonal matrices etc.
		CO5	Explain characteristic polynomial, minimal polynomial, Jordan form of an operator, trace of an operator etc.
MM 212	**Real Analysis -1**	**CO1**	Recall the concepts of functions of bounded variation, total variation, rectifiable curves, equivalence of path etc.
		CO2	Understand the definition, properties and applications and conditions for existence of Reimann-Steiltjles integrals.
		CO3	Illustrate the convergence, uniform convergence and pointwise convergence of sequences of functions.
		CO4	Analyze the sufficient conditions for the uniform convergence of series.
		CO5	Characterize continuity, boundedness, convexity etc.
MM213	**Ordinary Differential Equations**	**CO1**	Recall the basic concepts of integral & differential calculus.
		CO2	Solve second order linear equations using the method of undetermined coefficients, variation of parameters, successive approximation etc

		CO3	Evaluate series solutions of first order equations.
		CO4	Recognize the major classification of PDEs and the qualitative differences between the Classes of equations.
MM214	**Topology-1**	**CO1**	Illustrate metric spaces, open set, closed sets etc.
		CO2	Explain the equivalence of metric spaces, complete metric spaces etc.
		CO3	Illustrate topological spaces, interior, boundary, base, subbase etc.
		CO4	Describe connected and disconnected spaces, compact spaces and related theorems.
SEMESTER II			
MM221	**Abstract Algebra**	**CO1**	Recall basic concepts of Abstract Algebra
		CO2	Illustrate groups, cyclic groups, cosets, rings, fields, UFD's, PID's, extensions, splitting fields etc.
		CO3	Develop knowledge of conjugates, the Class Equation and Sylow theorems and apply these in relevant situations.
		CO4	Apply mod p test, Eisenstein criterion etc to verify the irreducibility of polynomials and Understand Galois group and Galois theory.
		CO5	Analyze the solvability of polynomials by radicals.
MM222	**Real Analysis II**	**CO1**	Understand the fundamental concepts of Mathematical Analysis. Familiarize with measurable sets and functions.
		CO2	Apply Jensen's inequality, Holder's inequality and Minkowski's inequality
		CO3	Understand the applications of Radon- Nikodym theorem.
		CO4	Analyse signed measures and proof of Hahn decomposition & Jordan decomposition theorems.
MM223	**Topology II**	**CO1**	Illustrate the concept of topological spaces and continuous functions.
		CO2	Illustrate the concept of product topology and quotient topology.
		CO3	Analyse Proofs of theorems concerning topological spaces, continuous functions product topologies, and quotient topologies.
		CO4	Understand the concept of separation axioms and explain the properties of T0, T1& T2 spaces.
		CO5	Explain convergence and Tychonoff theorem.

MM224	**Partial differential Equations and Calculus of Variation**	**CO1**	Recall differential Operators,superposition principle.
		CO2	Illustrate Quasilinear Equations and its characteristics
		CO3	Application of Quasilinear equations in real life situations
		CO4	Illustrate Green's function,Fredholom equations with separable kernals.
		CO5	Solve some typical problems of Euler differential Equation,isoperimetric problems etc.
SEMESTER III			
MM231	**Complex Analysis**	**CO1**	Understand elementary properties and examples of analytic functions.
		CO2	Describe the properties of Reimann Steiltjes integral.
		CO3	Represent analytic functions as power series and find the zeroes of an analytic function.
		CO4	Discuss Cauchy's theorem and integral formula and derive homotopic version of Cauchy's theorem.
		CO5	Classify the singularities of a function.
MM232	**Functional Analysis 1**	**CO1**	Recall the basic concepts regarding sets, linear spaces, linear maps etc.
		CO2	Understand and apply the concepts of normed spaces.
		CO3	Describe the continuity of linear maps.
		CO4	Analyze the proofs of Hahn Banach theorems and apply it
		CO5	Explain the fundamental concepts of functional analysis and their role in modern mathematics and applied contexts.
MM233	**Operations Research**	**CO1**	Formulate linear programming models and the graphical solutions of linear programs in two variables.
		CO2	Express linear programs in standard forms.
		CO3	Evaluate solution of a linear programming problem using simplex method.
		CO4	Understand project management and assignment problems.
		CO5	Explain Kuhn Tucker theory and non linear programming.

MM234	**Graph Theory**	**CO1**	Understand the basic concepts of graphs, directed graphs etc
		CO2	Determine whether a graph is planar or non planar.
		CO3	Explain walks, paths, circuits, connected graphs, bipartite graphs etc.
		CO4	Understand the concept of Eulerian and Hamiltonian graphs and apply it to describe the Konigsberg problem, utility problem, seating problem etc.
		CO5	Explain the concept of graph coloring, strong digraphs, Ramsey number and Turan's theorem.
SEMESTER IV			
MM241	**Number Theory**	**CO1**	Recall arithmetical function and Dirichlet multiplication
		CO2	Understand the characters of finite abelian Groups
		CO3	Apply fundamental theorem of arithmetic.
		CO4	Explain quadratic residues, reciprocity law and Jacobi symbol
		CO5	Describe the existence and number of primitive roots.
MM242	**Functional Analysis ll**	**CO1**	Explain the fundamental concepts of functional analysis and define self-adjoint and unitary linear operators.
		CO2	Demonstrate capacity for mathematical reasoning through analyzing, proving and explaining concepts from functional analysis.
		CO3	Analyze and apply projection and Riesz representation theorems.
		CO4	Distinguish between spectrum and resolvent set of a linear operator.
		CO5	Discuss compact linear operators and apply definition to prove theorems.
MM243	**Theory of Wavelet**	**CO1**	Recall diecrete fourier transform,elementary Hilbert space.
		CO2	Construct wavelets on Zn
		CO3	Explain Fourier Series, Fourier Transform,etc
		CO4	Find iteration step for wavelets on Z
MM244		**CO1**	Recall the basic concepts in complex analysis

	Advanced Complex Analysis	**CO2**	Understand the concepts of compactness and convergence in space of analytic functions
		CO3	Describe Reimann Mapping theorem , Wierstrass factorization theorem, Gamma function, Reimann zeta function etc.
		CO4	Analyze and apply Runge,s theorem, Mittag-Leffler theorem, Monodromy theorem Hadamard factorization theorem
		CO5	Understand genus & order of an entire function
MM245	**Dissertation/Project**	**CO1**	Demonstrate library research skills in the area of Mathematics
		CO2	Engage in an independent mathematical project
		CO3	Defend and Produce a mature oral presentation of a non-trivial mathematical topic
		CO4	Evaluate his own understanding from his performance in viva.

NAME OF THE PROGRAMME: POST GRADUATE PROGRAM IN PHYSICS

PROGRAM SPECIFIC OUTCOMES

PSO1. Understand and apply basic principles of Physics and basic interaction laws that governs our universe.

PSO2 .Understandthe basicdifferences in classical and quantum mechanical approach ,their realm and applicability in certain domain.

PSO3 .Understand and acquire basic knowledge in various techniques in optical spectroscopy and interpretation of spectra.

PSO4 .Understand and apply statistical methods in solving real Physics problems

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
PH 211	**CLASSICAL MECHANICS**	**CO1**	Students are able to learn the concepts of Lagrangian and Hamiltonian mechanics and use them to solve problems in mechanics.
		CO2	Able to learn concepts of generating functions, Poisson brackets Hamilton Jacobi equations and action angle variables.
		CO3	To equip the students to deal with central force problem and analyzing Kepler's laws.
		CO4	To inculcate the students the concepts of special and general theory of relativity and related problems.
		CO5	To acquaint the students about the theory of small oscillations and Euler's equations of motions of rigid bodies.
PH212	**Mathematical Physics**	**CO1**	To apply and analyze the various vector and matrix operations and to perform complex analysis for solving physical problems.
		CO2	To demonstrate and utilize the concepts of Fourier series and its transforms.
		CO3	To explain and differentiate different probabilistic distributions.
		CO4	To apply partial differential equations and special functions for solving mathematical problems.
		CO5	To illustrate and apply concepts of group theoretical operations and tensors
PH 213	**BASIC ELECTRONICS**	**CO1**	To equip the students design and analyze different analogue and digital circuits.
		CO2	To summarize the knowledge of basic arithmetic and data processing circuits and memory devices.

		CO3	To equip the students to explain various components in optical communications systems and microwave devices.
		CO4	To measure and analyze the different electronic signals.
SEMESTER II			
PH 221	**MODERN OPTICS AND ELECTROMAGNETIC THEORY**	**CO1**	To demonstrate the linear and nonlinear optical phenomena.
		CO2	To explain and discuss propagation of electromagnetic waves through different media.
		CO3	To restate formulations and relativistic effects in electrodynamics.
		CO4	To analyse the propagation of electromagnetic waves through waveguides.
		CO5	To use radiation theory in developing different antennas.
PH 222	**THERMODYNAMICS, STATISTICAL PHYSICS AND BASIC QUANTUM MECHANICS**	**CO1**	To explain the basic thermodynamic relations, Maxwell's equations and its consequences.
		CO2	To equip the students to demonstrate and apply classical and quantum statistics in different physical phenomena.
		CO3	To distinguish the different phase transitions using Ising model.
		CO4	Outline and apply foundations of quantum mechanics.
PH 223	**COMPUTER SCIENCE AND NUMERICAL TECHNIQUES**	**CO1**	To summarize computer hardware and its operating systems.
		CO2	Explain internal architecture of microprocessors 8085 and create assembly language programming.
		CO3	To develop and compile programs in python
		CO4	Apply numerical methods to solve physical problems.
PH 251	**GENERAL PHYSICS PRACTICALS**	**CO1**	To measure and analyze various physical quantities.
		CO2	To calculate error in various general physics experiments.
		CO3	To develop experimental skills

		CO4	Calibration of experimental setups and evaluate physical parameters using experimental observations
PH 252	**Electronics and Computer Science Practicals**	**CO1**	To design and construct various electronic circuits and its validation.
		CO2	To calculate error in various electronics experiments.
		CO3	To develop experimental and programming skills
		CO4	To learn handling various electronic instruments and components such as CRO, power supply, multimeter etc.
SEMESTER III			
PH231	**ADVANCED QUANTUM MECHANICS**	**CO1**	To extend the use of approximation methods viz variation, WKB, time dependent and time independent perturbations.
		CO2	To summarize different types of symmetry, conservation laws and quantum theory of scattering.
		CO3	To distinguish different approximation methods, to study the structure and properties of many electron systems
		CO4	To compute eigen values of angular momentum and evaluation of CG coefficients.
		CO5	Infer the requirements of relativistic quantum mechanics.
PH 232	**ATOMIC AND MOLECULAR SPECTROSCOPY**	**CO1**	Explain different symmetry operations and deduction of molecular structure.
		CO2	Distinguish and classify the different spectra shown by atoms and molecules
		CO3	Illustrate the various spectroscopic experimental techniques.
		CO4	Understand application of spectroscopy in structure determination of molecules
PH 233 E	**ADVANCED ELECTRONICS -I**	**CO1**	To summarize various techniques of digital and analog communication systems.
		CO2	Generalize the idea of information theory
		CO3	Illustrate various techniques for digital signal processing based Fourier and Z transform.

		CO4	Understand the new trends in wireless communication system
SEMESTER IV			
PH 233N	**ADVANCED NUCLEAR PHYSICS**	**CO1**	To outline and analyze nuclear properties, structure, models and reactions.
		CO2	To illustrate the mechanisms of nuclear fission and fusion.
		CO3	Explain various nuclear detectors and particle accelerators.
		CO4	To differentiate elementary particles and discuss their interactions.
PH 241	**CONDENSED MATTER PHYSICS**	**CO1**	Discuss crystal physics, lattice vibrations, models of thermal properties and band theory of solids.
		CO2	Explain the theoretical concepts of semiconductors, dielectric, magnetic and superconducting materials.
		CO3	To describe the synthesis and characterization techniques of nanomaterials.
		CO4	To apply the concepts in condensed matter physics to meet the challenges.
PH 242	**NUCLEAR AND PARTICLE PHYSICS**	**CO1**	To describe and analyze nuclear structure, models and reactions.
		CO2	To illustrate the mechanisms of nuclear fission and fusion reactions.
		CO3	Discuss various nuclear detectors and particle accelerators.
		CO4	To classify elementary particles and discuss their interactions.
PH 243 E	**ADVANCED ELECTRONICS-II**	**CO1**	Demonstrate microprocessor architecture, programing and interfacing devices
		CO2	Outline the basic concepts of embedded systems, artificial intelligence and neural networks.
		CO3	Illustrate fundamental data communications codes, radar and satellite communication systems.
		CO4	Understand how analog and digital technologies are used for satellite communication

PH 261	**Advanced Physics Practicals**	**CO1**	To measure and analyze various physical quantities.
		CO2	To calculate error in various advanced physics experiments.
		CO3	To develop experimental skills
		CO4	To analyze and point out results of experimental data.
PH 262 E	**Advanced Electronics Practicals**	**CO1**	To design and construct various electronic circuits and its validation.
		CO2	To calculate error in various electronics experiments.
		CO3	To develop and test assembly language programs using microprocessors.
		CO4	To become familiar with the architecture and instruction set of intel 8085/8086 microprocessor

NAME OF THE PROGRAMME: POST GRADUATE PROGRAM IN ZOOLOGY

PROGRAM SPECIFIC OUTCOMES

PSO1. Understand the importance of bio diversity , Learn various concepts of sustainable agriculture, understand environmental monitoring and management programmes like EIA and bioremediation

PSO2 .Create awareness on serious environmental issues, its consequences and their mitigative measures

PSO3. Acquire knowledge of various databases of proteins, nucleic acids. Identify hormones, their production site, their impacts on various physiological functions

PSO4. Gains knowledge on basic concept of research, research methodologies, and skills of problem solving. Carry out various procedures / practical techniques to solve various ecological and biological problems

PSO5. Develop research aptitude through project work – project design, data collection, analysis of data and interpretation of the results.

COURSE OUTCOME (CO)

COURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
ZO 211	**SYSTEMATICS AND EVOLUTIONARY BIOLOGY**	**CO1**	To create an ability to describe and animal specimen, identify its species, and preparation of taxonomic keys
		CO2	To inculcate knowledge on the basic aspects on systematic and taxonomy, theories of classification and nomenclature
		CO3	To study the evolutionary history of animals, theories of evolution, phylogeny and modern techniques in assessing the rate of evolution
		CO4	To Familiarise various methods of species identification and molecular taxonomy
ZO 212	**BIOCHEMISTRY**	**CO1**	To familiarize various biomolecules and their role in sustaining life
		CO2	To impart knowledge on various biochemical molecules and path ways in life processes.
		CO3	To impart deep knowledge about the mechanism and kinetics of enzymatic action in our body
		CO4	To showcase expertise in the molecular machinery of living cells, the structural principles of macromolecules, molecular recognition, metabolic control, and molecular signaling.
ZO 213	**BIOPHYSICS, INSTRUMENTATION**	**CO1**	Understand the principle and application of various instruments used in biological field

	AND COMPUTER SCIENCE	**CO2**	Familiarise the students with various techniques used in biological laboratory and in research.
		CO3	To familiarise various application of computer in biological laboratories.
		CO4	To get knowledge of the recent biophysical methods for the detection and treatment of various diseases
SEMESTER II			
ZO 221	**ADVANCED PHYSIOLOGY AND FUNCTIONAL ANATOMY**	**CO1**	To provide an overview of the broad field of anatomy and physiology, encompassing different aspects and focusing on human anatomy and physiology specifically
		CO2	To compare the structure and functioning of different systems in organisms from molecular level to organ systems and to the physiological attributes of organism as a whole.
ZO 222	**GENETICS, QUANTITATIVE ANALYSIS AND RESEARCH METHODOLOGY**	**CO1**	Create awareness about various aspects of Genetics, Biotechnology and viral genome and multiplication
		CO2	Understand the relationship between classical and molecular genetics.
		CO3	To introduce the basic principles of biostatistics to students and familiarize them with important statistical tools for data analysis.
		CO4	Introduce various research methodologies to equip the students to initiate research activities and to inculcate morals and ethics in them
ZO 223	**CELL BIOLOGY, MOLECULAR BIOLOGY AND BIOINFORMATICS**	**CO1**	To introduces of various aspects of cell, chromatin structure and signal transduction
		CO2	Familarise the molecular -biological aspects in cell biology.

		CO3	The students will aware about gene synthesis, expression and regulation and various aspects of DNA replication, transcription, protein synthesis, regulatory mechanisms etc.
		CO4	Emphasis the significance of Bioinformatics as an emerging field
ZO 214	**PRACTICAL I SYSTEMATICS AND EVOLUTIONARY BIOLOGY, BIOCHEMISTRY, BIOPHYSICS, INSTRUMENTATION AND COMPUTER SCIENCE**	**CO1**	Study animal taxonomy, various preservation techniques , preservation media used , various tools and materials for taxidermy
		CO2	To make the student skillful in various biochemical assays.
		CO3	To learn various Biophysical instrument for measuring & drawing microscopic organisms
ZO 224	**PRACTICAL II ADVANCED PHYSIOLOGY AND FUNCTIONAL ANATOMY**	**CO1**	To demonstrate meiosis stages and polytene chromosomes.
		CO2	To learn clinical procedures for blood cell analysis.
		CO3	To make the student skillful in simple histochemical procedures
SEMESTER III			
ZO 231	**MICROBIOLOGY AND BIOTECHNOLOGY**	**CO1**	Introduce the microbial world, its features and function.
		CO2	Familiarize the application of microbiology in various fields. CO3. Create awareness in modern trends of biotechnology, ethical and legal issues and also various biotechnology policies.
		CO3	Create awareness in modern trends of biotechnology, ethical and legal issues and also various biotechnology policies.
		CO4	Impart knowledge about different technique of gene transfer, creation of transgenic organisms, GMOs and microbial warfare.

ZO 232	**ECOLOGY, ETHOLOGY AND BIODIVERSITY CONSERVATION**	**CO1**	Understand the scope of different aspects of Ecology, animal behaviour, biodiversity and conservation of Environment
		CO2	Develop an understanding of the structure (trophic relationships, abiotic factors, and biomes) and function(energy flow and biogeochemical cycles) of different types of ecosystems across the world and that of India in particular.
		CO3	Imparting basic knowledge about the interactions between different species and how much it is essential for the existence of a healthy ecosystem.
		CO4	Generate an awareness about environmental pollution, develop skills to solve environmental problems, impact of population growth
		CO5	Generate an interest in the study of animal behaviour, and how various behavioural changes affects its distribution .
ZO 233	**IMMUNOLOGY AND DEVELOPMENTAL BIOLOGY**	**CO1**	Deliver a comprehensive and thorough understanding of Immunology and Developmental Biology, covering various aspects and providing students with extensive knowledge in these fields
		CO2	Expose the students to concepts, new developments and process in developmental biology.
		CO3	Develop a critical appreciation of methodologies specifically used to study the process of embryonic development in animals
ZO 234	**PRACTICAL III MICROBIOLOGY, BIOTECHNOLOGY, ECOLOGY, IMMUNOLOGY AND DEVELOPMENTAL BIOLOGY**	**CO1**	Students will get a deeper understanding of how organisms grow and develop, insights into genetic and environmental factors influencing development, and the ability to contribute to fields like genetics, medicine, and evolutionary biology.
		CO2	Research Opportunities: With this knowledge, students could pursue research in areas such as stem cell biology, regenerative medicine, or

			genetic engineering, where cloning techniques are used to explore developmental processes and treat diseases.
SEMESTER IV			
ZO 241	**POLLUTION BIOLOGY & ENVIRONMENTAL PHYSIOLOGY**	**CO1**	To familiarize individuals with the nature and breadth of Environmental Pollution and its management, encompassing both micro and macro levels.
		CO2	Providing foundational knowledge on environmental pollution, toxicology, and related challenges to enhance understanding of these subjects.
		CO3	Create awareness on the pollution problems and toxicological effects and toxicological procedures in experiments and analysis.
		CO4	Critically analyse various environmental pollution and its impact on human health
ZO 242	**ENVIRONMENTAL MANAGEMENT**	**CO1**	Familarise various ecosystems and its sustainable usage
		CO2	To acquire knowledge of environmental impact assessment
		CO3	To make awareness about the consequences of human interactions in the ecosystem.
		CO4	Develop awareness about various methods of ecosystem conservation and the need of conserving environmental resources for the existence of future generation.
ZO 243	**PRACTICAL IV - POLLUTION BIOLOGY & ENVIRONMENTAL PHYSIOLOGY**	**CO1**	Familiarize the students' different procedures for testing different aspects of pollution.
		CO2	Critically analyze how the environment influence organism's physiology.

		CO3	Transform student to a socially committed citizen especially in controlling pollution of various ecosystem
		CO4	Develop a scientific attitude in environment protection, solving various environmental issues and preventing environmental pollution
ZO 244	**PRACTICAL V - ENVIRONMENTAL MANAGEMENT**	**CO1**	To gain knowledge about utilizing and preserving natural resources, safeguarding habitats, and managing potential hazards
		CO2	To provide students with the necessary skills to address critical environmental challenges
		CO3	To foster a scientific mindset and enhance problem-solving skills
ZO 201	**PROJECT**	**CO1**	Develop an enthusiasm in studying and addressing various environmental issues and aptitude for research.
		CO2	To develop the skills necessary to identify suitable research topics and effectively present them through comprehensive training and guidance.
		CO3	To develop scientific aptitude, problem solving skills and skill in scientific writing

NAME OF THE PROGRAMME: POST GRADUATE PROGRAM IN CHEMISTRY

PROGRAM SPECIFIC OUTCOMES

PSO1. Develop better understanding of the current chemical principles, methods, and theories, with the ability to critically analyse at an advanced level.

PSO2. Acquire solid knowledge of classical and modern experimental tachniques and interpretation of results, thereby acquire the ability to plan and carry out independent projects.

PSO3 .Develop the qualities of time management and organization, planning and executing experiments.

PSO4 .Have a good level of awareness of the problems associated with health, safety and environment.

PSO5. Understand how chemistry relates to the real world and be able to communicate their understanding of chemical principles to a lay audience and as well apply the knowledge when situation warrants.

PSO6. Learn to search scientific literature and databases, extract and retrieve the required information and apply it in an appropriate manner.

PSO7. Demonstrate proficiency in undertaking individual and/or team-based laboratory investigations using appropriate apparatus and safe laboratory practices.

PSO8. Develop analytical solutions to a variety of chemical problems identified from application contexts; critically analyse and interpret qualitative & quantitative chemical information's.

PSO9 .Set the scene to make use of the wide range of career options open to Chemistry graduates.

COURSE OUTCOME (CO)

OURSE CODE	COURSE NAME	COURSE OUTCOME	
SEMESTER I			
CL 211	**INORGANIC CHEMISTRY 1**	**CO1**	Recall the basic concepts of crystal field theory.
		CO2	Understand Jahn –Teller theorem
		CO3	Describe MOT, and diagrams
		CO4	Describe crystal field theory, and spectrochemical series.
		CO5	Explain correlation analysis, applications of TG, DTA, DSC.
CL 212	**ORGANIC CHEMISTRY1**	**CO1**	Recall the concepts of chiral centre,chiral axis, and chiral plane.
		CO2	Understand the different typesof mechanism of substitution.
		CO3	Predict the products or reactants or reagents in selected type of reactions.
		CO4	Importance of stereochemistry.

		CO5	Free radical reactions, structure.
CL213	**PHYSICAL CHEMISTRY 1**	**CO1**	Postulates of quantum mechanics.
		CO2	Gas- solid interface and adsorption isotherms
		CO3	Understand different types of surfaces, properties.
		CO4	Understand catalysis and theories on reaction rates.
CL 214	**INORGANIC CHEMISTRY PRACTICALS I**	**CO1**	Interpret data from an experiment, including the construction of appropriate graphs and the evaluation of graphs
		CO2	Estimate volumetrically the concentration of Zn, Mg and Ni using EDTA and the volumetric estimation of Fe.
		CO3	Estimate colorimetrically the concentration of Chromium – (using Diphenyl carbazide), Iron (using thioglycollic acid), Iron (using thiocyanate), Manganese (using potassium periodate), Nickel (using dimethyl glyoxime
		CO4	Carry out the preparation of the metal complexes Potassium trioxalatochromate (III), Tetraammoniumcopper (II) sulphate, Hexamminecobalt (III) chloride.
		CO5	Record the UV spectra, IR spectra, magnetic susceptibility, TG, DTA and XRD of the complexes prepare.
CL215	**ORGANIC CHEMISTRY PRACTICAL I**	**CO1**	Interpret data from an experiment, including the construction of appropriate graphs and the evaluation of errors.
		CO2	Determine the correct method for separation of a binary mixture and make the separated compounds in pure form
		CO3	Develop thin layer chromatogram of a compound and determine its purity.
		CO4	Separate two compounds by column chromatography.
		CO5	Utilize the synthetic procedures and reagents to convert a compound into another. Differentiate the products by spectroscopic methods
		CO6	Use green chemical principles in the synthesis.

CL216	**PHYSICAL CHEMISTRY PRACTICALS I**	**CO1**	Interpret data from an experiment, including the construction of appropriate graphs and the evaluation of errors.
		CO2	Construct the Freundlich and Langmuir isotherms for adsorption of acetic/oxalic acid on active charcoal/ alumina and determine the concentration of acetic/ oxalic acids.
		CO3	Determine the rate constant, Arrhenius parameters, rate constant and concentration using kinetics
		CO4	Construct the phase diagram and determine the composition of an unknown mixture
		CO5	Construct the ternary phase diagram of acetic acid chloroform-water system and out the procedure in an unfamiliar situation to find out the composition of given homogenous mixture.
		CO6	Construct the tie-line in the ternary phase diagram of acetic acid chloroform-water system
		CO7	Determine distribution coefficient using distribution law
		CO8	Determine the equilibrium constant employing the distribution law.
		CO9	Determine the coordination number of Cu2+ in copperammonia complex.
		CO10	Determine Kf of solid solvent, molar mass of non-volatile solute, mass of solvent and composition of given solution
		CO11	Determine KT of salt hydrate, molar mass of solute, mass of salt hydrate and composition of given solution.
		CO12	Determine surface tension and parachor of liquids.
		CO13	Ascertain the relationship between surface tension with concentration of a liquid and use this to find out the composition of given homogeneous mixture.
SEMESTER II			
CL221	**INORGANIC CHEMISTRY II**	**CO1**	Determine the splitting of terms in weak and strong fields.

		CO2	Applies magnetic measurements in the determination of structure of transition metal complexes.
		CO3	Identify electronic configurations and term symbols of lanthanides and actinides.
		CO4	Elaborates the importance of beach sands of Kerala andtheir importance.
CL222	**ORGANIC CHEMISTRY II**	**CO1**	Discuss the fundamentals,operating principles and instrumentation of separation techniques.
		CO2	Differentiate the principle and applications of phase transfer catalysis with examples.
		CO3	Describe the various methods of determining reaction mechanisms and basic thermodynamic principles oforganic reactions.
		CO4	Explain the Hammet parameters of reaction and design an experiment to confirm the mechanism of a reaction.
		CO5	Identify different types of rearrangement reactions, determine the product of the reaction applying migratory aptitude, and reproduce for the mechanism of the reaction.
CL223	**PHYSICAL CHEMISTRY II**	**CO1**	Apply quantum mechanical principles in solving both real and imaginary spherical harmonics systems-multi electron systems and analyse spectral lines.
		CO2	Describe and explain the physical and chemical principles that underlie molecular structure determination techniques like microwave, vibrational, Raman and electronic spectroscopy.
		CO3	Predictlikely spectral characteristics of given molecular species and be able to rationalise those characteristics on the basis of structural and electronic arguments.
		CO4	Acquire knowledge of basics of statistical mechanics and compare statistical methods.
SEMESTER III			
CL 231	**INORGANIC CHEMISTRY III**	**CO1**	Demonstrate knowledge of advanced content in the areas of inorganic chemistry such as in organometallic compounds, bioinorganic

			compounds, spectroscopic methods in inorganic chemistry and nuclear chemistry.
		CO2	Examine the bonding in simple and polynuclear carbonyls with and without bridging and complexes with linear pi-donor ligands.
		CO3	Explain the structure and bonding of ferrocene and dibenzenechromium with the help of MO theory.
		CO4	Understand fundamental reaction types and mechanisms in organometallics and to employ them to understand selected catalytic processes in industry.
		CO5	Contrasts the thermodynamic and kinetic stability of complexes, analyses the factors affecting stability of complexes and explains the methods of determining stability constants.
CL 232	**ORGANIC CHEMISTRY III**	**CO1**	Describe and explain the physical and chemical principles that underlie molecular structure determination techniques such as UV-Visible,IR,mass and NMR spectroscopy.
		CO2	Apply knowledge of molecular structure determination using UV-Visible,IR,mass and NMR spectroscopic techniques to identify and/or characterize chemical compounds from experimental data.
		CO3	Predict likely spectral characteristics of given molecular species; solve the structures of unknown molecules using appropriate spectroscopic techniques.
		CO4	Discuss organic transformations with organometallic compounds and predict the products of reactions.
		CO5	Devise combinatorial method to create a library of compounds.
CL 233	**PHYSICAL CHEMISTRY III**	**CO1**	Understand the theories of chemical bonding and their application with help of approximate methods predict the nature of orbitals and molecular spectra.
		CO2	Compare MO and VBT.
		CO3	Understand the properties of gases and liquids and the nature of intermolecular forces in them.

		CO4	Describe the principle behind the determination of surface tension and coefficient of viscosity.
		CO5	Describe and explain the physical and chemical principles that underlie molecular structure determination techniques likeNMR,ESR,Mossbauer,NQR and PES Spectroscopy.
		CO6	Judge the degrees of freedom of systems and understand theories of irreversible thermodynamic systems.
CL 234	**INORGANIC CHEMISTRY PRACTICALS II**	**CO1**	Interpret data from an experiment, including the construction of appropriate graphs and the evaluation of errors.
		CO2	Estimate a simple mixture of ions by volumetric and gravimetric methods.
		CO3	Perform COD,BOD,DO and TDS analysis.
		CO4	Analyse the XRD of simple substances.
		CO5	Interpret TG and DTA curves.
CL 235	**ORGANIC CHEMISTRY PRACTICALS-II**	**CO1**	Interpret data from an experiment, including the construction of appropriate graphs and the evaluation of errors.
		CO2	Predict likely spectral characteristics of given molecular species; solve the structures of unknown molecules using appropriate spectroscopic techniques.
		CO3	Develop paper chromatogram of a compound and determine its purity.
		CO4	Estimate quantitatively the Aniline, Phenol,glucose,Ascorbic acid and Aspirin in a sample.
		CO5	Estimate colorimetricaly paracetamol, protein and ascorbic acid.
CL 236	**PHYSICAL CHEMISTRY PRCTICALS -II**	**CO1**	Interpret data from an experiment, including the construction of appropriate graphs and the evaluation of errors.
		CO2	Determine the strength of strong /weak acids by conductometric titrations.
		CO3	Verify Onsager equation and Kohlraush's law conductometrically.

		CO4	Determine the activity and activity coefficient of electrolytes.
		CO5	Employ spectrophotometry in determining unknown concentration.
SEMESTER IV			
CL 241	**CHEMISTRY OF ADVANCED MATERIALS**	**CO1**	Understand dimensions, synthesis, physicochemical properties of nanomaterials and its applications.
		CO2	Understand and apply characterization tools for analysing nano structures.
		CO3	Outline and recognize the types of polymerization, kinetics and mechanisms.
		CO4	understand the stereochemical aspects and methods for the determination of molecular weights of polymers
		CO5	discuss the synthesis and applications of selected classes of speciality polymers.
CL 242	**APPLIED ANALYTICAL CHEMISTRY**	**CO1**	Explain the thermal and radiochemical methods used in analytical chemistry.
		CO2	explain the application of radio isotopes and the need for a safe disposal of nuclear waste.
		CO3	Explain the principle underlying the methods used in food analysis.
		CO4	Explain the importance of DNA finger printing and ballistics in forensic analysis.
		CO5	Explain the methods of analysis and the principles involved in the analysis of biological fluids, enzymes, drugs and alcoholic beverages.
CL243(b)	**Visit to R&D Centre**	**CO1**	Understand the relevance of independent supervised research in a chemistry field
		CO2	The need of welldeveloped judgement.
		CO3	Adaptability and accountability as a practitioner or learner
CL243(a)	**DISSERTATION**	**CO1**	Demonstrate an advanced theoretical and technical knowledge of chemistry as a creative endeavour; analyse, interpret and critically evaluate scientific information.

		CO2	present information, articulate arguments and conclusions, in a variety of modes, to audiences in their field of research
		CO3	As part of a team or individually, design, conduct, analyse and interpret results of an experiment, and effectively communicate these in written reports and other formats
		CO4	develop an understanding of the requirements to undertake independent research in a chemistry field.
		CO5	demonstrate an understanding of the relationship between scientific research and the progress of new knowledge in a global scenario.