Criteria 2.6.1 Program outcomes, program specific outcomes and course outcomes

B.Sc. BOTANY (CBCS)

SEMESTER I

Core course 1 Code: BO1CRT01

Methodology of Science and an Introduction to Botany

Objectives:

- Understand the universal nature of science
- Demonstrate the use of scientific method
- To lay a strong foundation to the study in Botany
- Impart an insight into the different types of classifications in the living kingdom.
- Appreciate the world of organisms and its course of evolution and diversity.
- Develop basic skills to study Botany in detail

SEMESTER II

Core course 2 Code: BO2CRT02

Microbiology, Mycology and Plant Pathology

Objectives:

- Understand the world of microbes, fungi and lichens
- Appreciate the adaptive strategies of the microbes, fungi and lichens
- To study the economic and pathological importance of microorganisms

SEMESTER III

Core course 3 Code: BO3CRT03

Phycology and Bryology

Objectives:

- To study the evolutionary importance of Algae as progenitors of land plants
- Understand the unique and general features Algae and Bryophytes and familiarize
- To study the external morphology, internal structure and reproduction of different types of Algae and Bryophytes
- Realize the application of Phycology in different fields

SEMESTER IV

Core course 4 Code: BO4CRT04

Pteridology, Gymnosperms and Paleobotany

Objectives:

 Understand the diversity in habits, habitats and organization of various groups of plants.

 To impart an insight into the modern classifications in lower forms of plants.

 Understand the evolutionary trends in Pteridophytes and Gymnosperms.

 Study the anatomical variations in vascular plants.

 Understand the significance of Paleobotany and its applications.

SEMESTER V

Core course 5 Code: BO5CRT05
Anatomy, Reproductive Botany, Microtechnique

Objectives:

 Imparting an insight into the internal structure and reproduction of the most evolved group of plants , the Angiosperms

 Understand the individual cells and also tissues simultaneously

 Understand the structural adaptations in plants growing in different environment.

 Understand the morphology and development of reproductive parts.

 Get an insight in to the fruit and seed development.

 Understand the techniques used to preserve and study plant materials.

Core course 6 Code: BO5CRT06
Research methodology, Biophysics and Biostatistics

Objectives:

 To equip the students to conduct independent research and prepare research reports.

 To make the students acquaint with different tools and techniques used in research work.

 To equip the students with basic computer skills necessary for conducting research.

 To enable the students to have enough numerical skills necessary to carry out research.

Core course 7 Code: BO5CRT07
Plant Physiology and Biochemistry

Objectives:

 Acquire basic knowledge needed for proper understanding of plant functioning.

 Familiarize with the basic skills and techniques related to plant physiology.

 Understand the role, structure and importance of the bio molecules associated with plant life.

Core course 8 Code: BO5CRT08
Environmental Sciences and Human Rights

Objectives:

 Acquaint the student with the significance of Environmental Science.

 Make the students aware about the extent of the total biodiversity and the importance of their

conservation.

 Help the student to design novel mechanisms for the sustainable utilization of natural

resources.

 Enable the students to understand the structure and function of the ecosystems.

 Enable the students to understand various kinds of pollution in the environment, their impacts

on the ecosystem and their control measures

 Make the students aware about various environmental laws in India and the role of various

movements in the protection of nature and natural resources.

Open course Code: BO5OPT01
Agri-based microenterprises

Objectives:

 Provide basic information about the business opportunities in plant sciences.

 Inform the student about sustainable agriculture and organic farming.

 Inculcate an enthusiasm and awareness about ornamental gardening, nursery management and

mushroom cultivation.

SEMESTER VI
Core course 9 Code: BO6CRT09
Genetics, Plant Breeding and Horticulture

Objectives:

 Imparting an insight into the principles of heredity

 Understand the patterns of inheritance in different organisms

 Understand the inheritance pattern of nuclear and extra nuclear genes

 Understand the methods of crop improvement

 Understand the importance of horticulture in human welfare

 Develop skill in gardening technique among students

Core course 10 Code: BO6CRT10

Cell and Molecular Biology

Objectives:

 Understand the ultra structure and functioning of cell in the sub-microscopic and molecular level.

 Get an idea of origin, concept of continuity and complexity of life activities.

 Familiarization of life processes.

 Understand the basic and scientific aspect of diversity.

 Understand the cytological aspects of growth and development.

 Understand DNA as the basis of heredity and variation.

Core course 11 Code: BO6CRT11

Angiosperm morphology, Taxonomy and Economic Botany

Objectives:

 Acquaint with the aims, objectives and significance of taxonomy.

 Identify the common species of plants growing in Kerala and their systematic position.

 Develop inductive and deductive reasoning ability.

 Acquaint with the basic technique in the preparation of herbarium.

 Familiarizing with the plants having immense economic importance.

Core course 12 Code: BO6CRT12

Biotechnology and Bioinformatics

Objectives:

 Understand the current developments in the fieldof Biotechnology and Bioinformatics.

 Equip the students to carry out plant tissue culture.

 Introduce the vast repositories of biological data knowledge.

 Equip to access and analyze the data available in the databases

Programme Elective Course Code: BO6PET02
Plant Genetic Resources Management

Objectives:

 Acquaint the student with the history and evolution of crop plants, and their diversity.

 Familiarize the student with the available plant genetic wealth and the measures adopted for the conservation of these resources.

 Help the student to identify the crop plants and their wild relatives.

 Help the student to explore the potentialities of various underutilized plants to project as the future food prospects.

 Understand the significance of modern technology to locate the distribution of endangered species

B.A ENGLISH - Course Outcomes (CO)

SEMESTER	PAPER CODE	TITLE OF THE PAPER	CO	COURSE OUTCOME
1	EN1CCT01	Fine Tune Your English	1	Demonstrate an understanding of simple grammatical structures in conversations and discussions.
			2	Analyse the situations where different grammatical units are used
			3	Employ contextualized meaning of phrasal verbs, modals, and modal expressions.
			4	Generalise the principles evolved through study and practice of individual elements and examples of grammar
			5	Generate simple sentences containing learned vocabulary and using appropriate grammatical structures.
			6	Construct targeted grammatical structures meaningfully and appropriately in oral and written production
1	EN1CCT02	Pearls From The Deep And Gems Of Imagination	1	Introduce different genres of English Literature
			2	To get familiarized with different authors and their works
			3	Identify the main writers and their works
			4	Analyse the text by comparing it with the real life situations
			5	Compare and contrast different features of different genres
1	EN1CRT01	Methodology Of Literary Studies	1	Discern the major signposts in the historical evolution of literary studies from its inception to the current postcolonial realm

			2	Appraise literature as a specific discipline in humanities
			3	Map the tenets of traditional approaches and new approaches like formalism
			4	Evaluate the shift towards contextual-political critiques of literary studies
			5	Analyse the questions raised by cultural studies
			6	Resolve the political domain of feminism
			7	Estimate the issues of subalternity in the literary domain
			8	Critique the nuances of regionality as depicted in the literary domain against the public domain
2 (B.A.,B.Sc)	**EN2CCT03**	**Issues That Matter**	**1**	Ability to interrogate one's own ethical values, and also be aware of major ethical issues
			2	Demonstrate a familiarity with kinds of writing which seek to represent and make sense of the experiences of the individual and his social context
			3	Identify major issues of contemporary significance
			4	Respond rationally and positively to the Socio-political issues in society
			5	Internalise the values imparted through the selections.
			6	Acquire the basic knowledge about environment issues Discuss the human values and culture Understand the historical developments in physics and its methodology.
2 (B.A.,B.Sc)	**EN2CCT04**	**Savouring The Classics**	**1**	Map the important world classics.
			2	Recognize important classic writers
			3	Understand time tested world classics.
			4	Learn the features of classics from various lands
			5	Recognize important formal elements of a world Classic
			6	Appreciate the tone, features and plot of a classic
			7	Analyse common features of world classics despite of geographical boundaries
			1	Discern the evolution of English language till the present time
			2	Evaluate the differential traits of English language along different time frames

2 (B.A.,B.Sc)	**Core Course -2**	**Introducing Language And Literature**	**3**	Map the evolution of literature from antiquity to postmodern times
			4	Categorize the diversity of genres
			5	Execute the techniques of representation and narration
			6	Determine the links between literature and film as narrative expressions.
			7	Map the emergence of British and American Literature through diverse periods
			8	Integrate the nuances of English Language and the vast dimensions of English/English literature
2 (B.Com)	**EN2CCTO3**	**Issues That Matter**	**1**	Ability to interrogate one's own ethical values, and also be aware of major ethical issues
			2	Demonstrate a familiarity with kinds of writing which seek to represent and make sense of the experiences of the individual and his social context
			3	Identify major issues of contemporary significance
			4	Respond rationally and positively to the Socio-political issues in society
			5	Internalise the values imparted through the selections.
			6	Acquire the basic knowledge about environment issues
3	**EN3CCT05**	**Literature And As Identity**	**1**	Identify the subtle negotiations of Indigenous and Diasporic Identities with-in Literature
			2	Contrast the different identities that exist in our diverse society
			3	Draw examples from the lives of the South Asian regional identities as how to overcome the tensions and the interstices in the society
			4	Critique the fissures that exist in the society through the Life Writings and be aware of the importance of alternative/alternate/marginal identities.
3	**EN3CRT03**	**Harmony Of Prose**	**1**	Identify different kinds of prose of different ages.
			2	Familiarise with the writing styles of masters of Prose writing.
			3	Evaluate the growth of prose writing in English
			4	Differentiate between the various kinds of language and diction of different ages.

			5	Analyze the issues discussed in these prose pieces.
3	**EN3CRT04**	**Symphony Of Verse**	**1**	Understand the rich texture of poetry in English.
			2	Categorise the representation of poetry in various periods of the English tradition
			3	Become aware of the emerging cultural and aesthetic expressions that poetry makes possible.
			4	Thematically explore and writer criticism about a taught poem
			5	Inspire the student to express her own emotions in the form of poetry
3	**EN3CMT03**	**Evolution Of Literary Movements The Shapers Of Destiny**	**1**	Familiarise the impact of historical conquest on English Literature.
			2	Understand the times span of English Monarchs and their influence on English Society.
			3	Analyse the effect of different historical events on English Language and Literature.
			4	Describe the importance of historical events on English society and English culture
			5	Create an awareness about the classification of English literature.
			6	Understand the geography of Britain,its customs and traditions.
			7	Analyse the role of English language and its contributions in the modern world.
3	**EN3CCT05**	**Literature And As Identity**		
4 (B.A.,B.Sc)	**EN4CCT06**	**Illuminations**	**1**	Identify the positive and negative values in life
			2	Contrast positive and negative values
			3	Draw examples from the lives of the personalities in the text to overcome setbacks in life
			4	Critique the aspects of the society to make positive changes
4 (B.A.,B.Sc)	**EN4CRT05**	**Modes Of Fiction**	**1**	Understand the feature of the genre
			2	Interpret the cultural significance of a particular fictional work
			3	Distinguish various modes of fiction.

			4	Comprehend the categories of British and non- British short fiction.
			5	Critically evaluate a work based on the theoretical framework.
4 (B.A.,B.Sc)	**EN4CRT06**	**Language Andlinguistics**	**1**	Classify the speech sounds of English
			2	Distinguish the nature of language and linguistics
			3	Determine the role of speech organs in the production of speech sounds
			4	Analyse the structure of syllables
			5	Evaluate the importance supra segmental features in effective use of language
			6	Apply phonemic transcription
			7	Distinguish between different morphological structures
			8	Identify various sense relations in Semantics
			9	Differentiate between different basic notions in Syntax
			10	Evaluate the significance of different theories on grammar
4 (B.A.,B.Sc)	**EN4CMT04**	**Evolution Of Literary Movements: The Cross Currents Of Change**	**1**	Understand literature against the backdrop of history.
			2	Identify the historical and literary processes
			3	Reflect on the evolution of literature and to help them perceive the interplay of social processes and literature
			4	Evaluate the socio-cultural-economic influences on literary texts and writers
			5	Evaluate the influence of historical events on the personal and communal life
			6	Engage with the major genres and forms of English literature and develop fundamental skills required for close reading and critical thinking of the texts and concepts.
			7	To critically engage with culture , gender and marginality as well as recognise the importance of gender specificity in literature
			8	To understand feminism as a social movement and a critical tool.
			1	Map the important world classics.
			2	Recognize important classic writers

4 (B.Com)	**EN4CCT08**	**Revisiting The Classics**	**3**	Understand time tested world classics.
			4	Learn the features of classics from various lands.
			5	Recognize important formal elements of a world Classic
			6	Appreciate the tone, features and plot of a classic
			7	Analyse common features of world classics despite of geographical boundaries
5	**EN5CRT07**	**Acts On The Stage**	**1**	Introduce the major theatre forms and movements
			2	Familiarize with classical drama
			3	Introduce the features of the Elizabethan theatre
			4	Inculcate interest in classical literature
			5	Analyse the aspects of contemporary theatre
			6	Estimate the presentation of social issues through theatre
5	**EN5CRT08**	**Literary Criticism And Theory**	**1**	Examine the major developments in literary criticism from the ancient times to the 20th century
			2	Identify the realm of literary theory and understand major theoretical schools
			3	State the chief strains of Indian literary criticism
			4	Critically analyse short poetical pieces
5	**EN5CRT09**	**Indian Writing In English**	**1**	Identify the various ways in which English literature is written in the Indian subcontinent
			2	Discern how the Indian literature serves as a platform for forming, consolidating, critiquing and re-working the issue of 'national identity' at various levels
			3	understand the subtle flavours that distinguish the 'Indian' quotient in English writing from India
			4	Critically analyse the *locus standi* of diasporic Indian writers
			5	examine the different concerns that Indian English writers share, cutting across sub-nationalities and regionalities
5	**EN5CRT01**	**Environmental Studies And Human Rights**	**1**	Understand the complex Environmental issues.
			2	Encourage the students to investigate and Research Environmental issues.

			3	Discern how their decisions and actions affect the environment.
			4	Realize the inter-relationship between man and environment and helps to protect nature and natural resources.
			5	Encourages character building, and develops positive attitudes and values.
			6	Understand the basic concept and history of Human Rights.
			7	Discern Human rights relevant to different stratas of the society.
			8	Examine oneself and relates one's own rights and responsibilities.
5	**EN5OPT03**	**English for Careers**	**1**	To make the students competent in their job-seeking, job-getting and job-holding needs.
			2	To develop communicative skills, which will enable them to prepare for a career and function effectively in it
			3	To equip themselves in oral and written communication to enhance their academic and professional use of language
			4	To train themselves in making effective presentations
6	**EN6CBT02**	**Modern Malayalam Literature In Translation**	**1**	Evaluate the richness of Malayalam literature
			2	Establish a rapport with the cultural aspects of the living environs.
			3	Discern the diction, style and prosody of Malayalam Literature
			4	Critique the various genres in Malayalam
			5	Identify the modern trends in Malayalam literature
			6	Experiment with form in Malayalam poems and prose
			7	Infer the nuances of the process of translation
			8	Abridge the cultural gaps through translations
6	**10 EN6CRT10**	**Postcolonial Literatures**	**1**	recognize the social and political aspects of postcolonial societies
			2	categorize the diversity of genres in postcolonial studies

			3	understand the impact of colonialism and imperialism on native cultural identities
			4	identify the links between language, history and culture
			5	Integrate the nuances about the cultural aspects of postcolonial societies
6	**EN6CRT11**	**Women Writing**	**1**	examine the major concepts and theories of feminism and recognise its epistemological and methodological diversity and character
			2	understand the theoretical and literary responses of women and the concerns that govern feminist literature
			3	respond to literature from a feminist perspective
			4	understand how the patriarchal notions pervade in the social and cultural scenario
			5	identify how stereotypical representations of women are constructed and how these are subverted by feminist writing
			6	recognise the questions raised by cultural studies and feminism
6	**EN6CRT12**	**American Literature**	**1**	Evaluate the heterogeneity of American culture
			2	Appraise the prose, poetry, drama, and fiction in relation to their historical and cultural contexts.
			3	Comprehend the various literary movements in American literature
			4	Critique the literary outputs of American literature
			5	Infer the literary and cultural scenario of American Literary History
6	**EN6CRT13**	**Modern World Literature**	**1**	Identify those writings which cross the borders of its country of origin.
			2	Discern how the literatures deeply reflect the vicissitudes of life.
			3	Explain the diversity of cultures and the commonalities of human experience reflected in the literature of the world.
			4	Understanding of literary, historical, social and cultural movements associated with these texts.
			5	Identify the platform where poetics and politics fuse.

			6	Infer the alternative notion of literary canon.
			7	Examine oneself and one's culture through multiple frames of reference, including the perception of others from around the world.
6	**EN6PR01**	**Project**	**1**	To elicit specific information.
			2	Collect data and arrive at inferences using a small sample
			3	Discuss and draft a plan for carrying out a piece of work systematically
			4	Refer to authentic sources of information and document the same properly.
			5	Understand the Basic concept of research and the terminology involved
			6	Have a clear idea about research documentation and research ethics
			7	Develop reference skills including skills to use dictionaries, encyclopedias, library and net resources

B A HINDI

SEMESTER - I CORE COURSE PAPER

HN1CRT01 :METHODOLOGY AND DEVELOPMENT OF HINDI LANGUAGE

Aims:

To generate a systematic view about the possibilities of Hindi language, its functions and to convey the social and cultural importance of Hindi language.

Objectives:

1. Acceptances of the creativity of Hindi language.
2. Students will have full awareness of the development of Hindi language in different periods.
3. Students will develop a wide outlook of the social supportive nature of Hindi language.

SEMESTER – I COMPLENTARY COURSE PAPER – I

HN1CMT01 : FUNCTIONAL ASPECTS OF HINDI LANGUAGE

Aim:

To familiarize the students of Hindi with the latest roll of the language as functional Hindi in the field of administrations, science, computer and technology.

Objectives:

1. To let the students know about the meaning, expressions and the scope of functional Hindi.
2. To let the students know about the provisions of the --- , regulations and presidential orders passed from time to time in our institution with regards to Hindi.

SEMESTER – I COMPLENTARY COURSE PAPER – II
AN INTRODUCTION TO JOURNALISM

Aim:

To motivate the students to acquire individual, social, political and cultural consciousness towards the security of the past, for developing the present and to setup a new environment in the future.

Objectives:

1. To mould a student in such a way that he uses his pen for the upliftment of the society and nation.
2. To initiate the feelings of patriotism, truth, nonviolence , hard work and self-sufficiency in to the students, there by resulting in the creation of such citizens, those always stand for public service and make the world a peaceful place to live in.

SEMESTER - I CORE COURSE
HN2CRT02: HINDI GRAMMAR AND SHORT STORIES

Aims:

To help the students to use correct syntax and grammatical forms of Hindi.
To help them to develop the language skills.

Objectives:

1. Students will have a good base in language and they will be aware of the new changes happening in language.
2. This will help to develop communication skills in the students.

SEMESTER - II COMPLENTARY COURSE- 1 PAPER –2
HN2CMTO1 :ADMINISTRATIVE NOTING AND DRAFTING

Aim:

To familiarize the students of Hindi with the latest role of the language as functional Hindi in the field of administration.

Objectives:

1. To let the students to know the meaning, expressions and scope of functional Hindi.
2. To make the students understand the relevance of Hindi in its new role.
3. To make students aware of the practical importance of functional Hindi in official procedure.

SEMESTER – II COMPLENTARY COURSE- II PAPER –2
HN2CMT02 : ART OF EDITING

Aims:

To make every student use his sense of right and wrong, justice and injustice, to analyse the importance of newspaper and editing in today's changing world.

Objectives:

1. At the of the course the student should learn to understand the importance of newspaper as to how hard it is striving for the noble cause of leading the country to the path of rightness and morality.

SEMESTER – III CORE COURSE PAPER – 3
HN3CRT03 : DEVELOPMENT OF HINDI LITERATURE UP TO RITIKAAL

Aim:

To familiarize the development of Hindi literature with all the social, cultural support.

Objectives:

1. To develop an outlook about the history of Hindi literature.
2. To create an awareness of the famous writers of this period.
3. To know about of our country through the famous works of the poets.
4. To know about the important changes and movements of the referred period.

SEMESTER - III COMPLEMENTARY COURSE 1 FUNCTIONAL HINDI

HN3CMT01 : PAPER 3 FUNCTIONAL HINDI AND TRANSLATION

Aim :

Hindi, being our National language and also official language, study of Functional Hindi and translation is aimed at making the learners skilled in the use of Hindi as medium of communication and as official language.

Objectives:

1. To develop the conversational skill of the students.
2. To develop the translation skills of the students.

SEMESTER – III COMPLEMENTARY COURSE 2 JOURNALISM

HN3CMT02 : JOURNALISM AND THE ART OF ADVERTISING

Aim:

Today's changing world, it is very necessary to familiarizing the students the importance of advertisements.

Objectives

At the end of the course, the student should be aware of the importance of Advertisements. It also helps the student to boost his creativity.

SEMESTER I V COURE COURSE

HN4CRT04: ANCIENT POETRY

Aim The study of poetry, especially ancient poetry of Hindi, conveys the philosophical heritage:e of the middle ages

.

Objectives :

A general information about the history of Hindi poetry awakens the aesthetic vision of students.

COMPLEMENTARY COURSE 1 FUNCTIONAL HINDI

HN4CMT01 : FUNCTIONAL HINDI AND INFORMATION TECHNOLOGY

Aim : To provide general information about computer and information technology.

Objective

1. To develop scientific and technological aptitude.
2. To create more job opportunities.

COMPLEMENTARY COURSE 2 JOURNALISM

HN4CMT02 : JOURNALISM AND MASS COMMUNICATION

Aim: To provide general information about journalism and mass communication.

Objective

1. To familiarize the students the relevance, History and Evolution of communication.
2. Gets an idea of the changes, struggles and current statistics of media.

SEMESTER – V COURE COURSE PAPER 5

HN5CRT05 :ECOLOGY AND HUMAN RIGHTS IN HINDI LITERATURE

Aim : Environment education helps students to understand how their decisions and actions affect the environment, builds knowledge and skills necessary to address complex environmental issues as well as ways we can take action to keep our environment healthy and sustainable for the future. Awareness of Human Rights also help the students to be a good citizen.

Objective

Study of Ecology and Human Rights help the students to build their character, develop positive attitudes and values.

SEMESTER – V CORE COURSE PAPER – 6

HN5CRT06 : DEVELOPMENT OF MODERN HINDI LITERATURE

Aim: To introduce the development of modern Hindi literature

Objectives:

1. To help the students develop skills in literature.
2. This will create a wide outlook among the students about our national language.

SEMESTER - V CORE COURSE PAPER – 7

HN5CRT07 :MODERN HINDI FICTION

Aims:

The study of Humanities especially fiction awakens the aesthetic vision of students.

This paper enhance the feelings of oneness and humanity among the students.

Objectives:

The fiction generally activates the consciousness among young people and enable them to search new horizons of life in his own way.

SEMESTER - V :CORE COURSE PAPER – 8

HN5CRT08: MODERN HINDI POETRY

Aims:

Hindi is a very rich language especially in the field of poetry. This course aims to introduce all the main notable modern Hindi poets and their works.

Objectives:

1. The students could enjoy the Hindi poems.
2. Student's dexterity in the language will improved.
3. Through this paper the student become aware of the modern trends.

SEMESTER - V Open COURSE Option – 1

HN5OPT01 :FILM STUDIES

Aims:

This course is intended to introduce the students to the basics of film studies. Familiarize the students about the impact of film on society.

Objectives:

1. To enrich and enlarge the students vision and experience about the films in Indian film industry.
2. To familiarize the students on understanding the history of cinema.
3. To create awareness with new digital culture.

SEMESTER – VI CORE COURSE PAPER – 9
HN6CRT09 : LITERARY CRITICISM

Aim:

The main aim of the course is to familiarise the students to the world of poetics - to explore into the theoretical and applied aspects of the eastern and western literary criticism.

Objectives:

1. To create an awareness in the students to enjoy and analyse the literary works in a proper manner.
2. Understanding the different approaches of critics through eastern and western criticism.
3. To familiarise the students with the latest trends in criticism like modernism, post modernism,etc

SEMESTER - VI CORE COURSE PAPER – 10
HN6CRT10 :FEMINIST LITERATURE IN HINDI

Aim:

This course intends to mark the importance of women's writing in Hindi – sensitize the students about the social issues reflected in women's writing

Objectives:

1. Familiarizing the history of women's writing in Hindi
2. Understanding women writers works in the context of social issues
3. A search on women's identity and concepts of women

SEMESTER - VI CORE COURSE PAPER – 11
HN6CRT11 :HINDI PROSE

Aim:

To provide a general information about the prose literature in Hindi

Objectives

1. To appreciate Hindi prose literature using specimens of prose
2. To make the students to come in contact with the social, cultural, scientific and environmental issues of our country.

SEMESTER – VI CORE COURSE PAPER – 12
HN6CRT12: DRAMA AND ONE ACT PLAYS

Aim:

The aim of the course is to develop conversation skills among the students and encourage them to hindi drama and one act plays.

Objectives:

1. Appreciation of hindi literature using specimans related to drama and one act plays

2. Practising literary analysis and literary criticism using the specimen provided as text for detailed study.
3. Evaluation of current trends.

SEMESTER - VI CHOICE BASED CORE PAPER OPTION – 1
HN6CBTO1:HINDI SATIRE

Aim:

To develop a positive approach to the problems of modern world and solve them.

Objectives:

To make students responsible persons of the new world . They also come around with practical solutions for the problems.

COMMON COURSE HINDI

B.A/ B.Sc Model I (Hindi) **SEMESTER I**

Paper-1 (Prose and One Act Plays) :HN1CCT01

Aim

The aim of the course is to provide a general information about Hindi literature through prose and one act plays.

Objective

1. To familiarize the students with various trends in Hindi literature.
2. To create an awareness of Indian culture.
3. Understanding various trends in Hindi and get an awareness of the context of one act plays.

SEMESTER II

Paper-2 (Short stories and Novel): HN2CCT02

Aim

To enlighten the mind of the students, the study of literature is necessary

Objectives

The study of short stories and Novel help the students to acquaint the different streams of the literature. It enables the students to acquire the knowledge about the social conditions of the common people in different era, the different culture and civilization speed over the country.

SEMESTER III

Paper-3 (Poetry, Grammar & Translation): HN3CCT03

Aim

Hindi, being our National language and also official language, study is aimed at making the learners skilled in the use of Hindi as medium of communication and as official language.

Objectives

1. Familiarize some of the eminent poets and their poems in Hindi literature and thereby include socio-culture values.
2. Familiarizing the practical grammar and analyzing the problems and challenges of effective usages in Hindi.

3. Understanding translation as a linguistic, cultural, economic and professional activity.

SEMESTER IV

Paper-4 (Drama & Long Poem): HN4CCT04

Aim

To enlighten the hearts of the students the study of literature in essential. So Drama is included in the syllabus. The study of poetry will enhance the aesthetic vision.

Objective

To create aesthetic vision in students.

SEMESTER I

CORE COURSE PAPER I : METHODOLOGY AND DEVELOPMENT OF HINDI LANGUAGE HN1CRT01

Aim

To generate a systematic view about the possibilities of Hindi language, its functions and to convey the social and cultural importance of the Hindi language.

Objective

1. Acceptance of the creativity of Hindi language.
2. Students will have full awareness of the development of Hindi language in different periods.
3. Students will develop a wide outlook of the social supportive nature of Hindi language

COMPLEMENTRY COURSE –I

Paper 1 FUNCTIONAL ASPECTS OF HINDI LANGUAGE : HN1CMT01

Aim

To familiarize the students of Hindi with the latest role of the language as Functional Hindi in the field of administration, science , computer and technology.

Objective

1. To let the students know the meaning, expression and the scope of Functional Hindi.
2. To let the students know the provisions of the acts , regulations and presidential orders passed from time to time in our institution with regards to Hindi.

B.Com Model II

SEMESTER I

PROSE, COMMERCIAL CORRESPONDANCE & TRANSLATION : HN1CCT01

Aim

To enlighten the mind of the students, the study of literature in necessary.

Objective

The study of prose and commercial correspondence help the students to develop a wide outlook of the social supportive nature of Hindi language. Also develop the art of translation.

SEMESTER II

POETRY AND MASS MEDIA : HN2CCT02

Aim

To enlighten the hearts of the students, the study of literature is inevitable. So poetry is included in the syllabus. Poems in this collection are very beautiful and powerful to reveal the secrets of life.

Objective

Familiarize some of the eminent poets and their poems in Hindi literature and thereby socio-cultural values.

B A POLITICAL SCIENCE

PS1CRT01: CORE I: METHODOLOGY AND PERSPECTIVES OF POLITICAL SCIENCE

Course Objective: The purpose of this course is to help the students understand the fundamental aspects of methodology and philosophy of social sciences in general and the disciplinary history of political science in particular. The course seeks to achieve this understanding by studying the historical evolution of modern social scientific practices as well as the changing concerns in the modern and post-modern conditions. The course also seeks to provide some ideas on the major debates in the social scientific methodologies and also to inquire certain core concepts in political science.

PS2CRT02: CORE II: INDIAN CONSTITUTION: INSTITUTIONS AND PROCESSES

Course Objectives: Major aim of the course is to help the students understand the historical evolution of democratic political system in India and also to trace constitutional developments, inquire on the basic structures and values of the political system etc. It also deals with the evolution of constitutional and statutory institutions and the major amendments to the constitution.

PS3CRT03: CORE III: ISSUES AND POLITICAL PROCESSES IN MODERN INDIA.

Course Objectives: This paper attempts to study the power of the Centre and the autonomy of the states within the Indian federal system, which reflect and articulate well-defined regional identities. India's diversity, in terms of socio-economic, political and cultural systems provides an opportunity for the learners to study the Centre-State relations critically. There is an increasing need to understand that despite the wide array of powers, with which the Centre is armed by the constitution, there has been a growing trend of assertion of autonomy on the part of the states. It also emphasizes on local influences that derive from social stratification of castes and jatis, from languages, religions and ethnic determinants and critically assess its impact on the political processes.

PS3CRT04: CORE IV: POLITICAL THOUGHT: INDIAN TRADITIONS

Course Objectives: The course acquaints students with the fundamental texts and diverse traditions of Indian political thought in the pre-modern and modern periods. The course tries to examine the problems and prospects of studying political thought in India and also seeks to recognize the continuity and change in various traditions like Brahmanic and Shramanic streams of political thought in the subcontinent. It also engages with the empirical and normative justifications provided by various political thinkers in the case of state, nationalism, culture, community, secularism, social justice, authority, equality, political obligation and so on.

PS4CRT05: CORE V: INTRODUCTION TO POLITICAL THEORY

Course Objectives: The purpose of this course is to help the students understand the fundamental concerns of political theory and political philosophy from a methodologically pluralist point of view. The course introduces various approaches and traditions in political theory and also engages with aspects of state, nation, sovereignty and political system etc. The course seeks to achieve this understanding by studying the changing concerns of political theory in the pre-modern, modern and postmodern conditions.

The course also intends to generate some fruitful discussions on public policies in contemporary democracies on the basis certain normative concepts like rights, equality, justice, democracy and so on.

PS4CRT06: CORE VI: POLITICAL THOUGHT: WESTERN TRADITIONS

Course Objectives: The purpose of this course is to help the students understand the fundamental texts and traditions of Western political thought. The course tries to introduce various reading strategies like textual, contextual, and hermeneutic methods for analyzing, interpreting and evaluating political thinkers/texts of different periods. The course seeks to recognize the continuity and change in the grand traditions of political thought in the Western world. It further engages with the central ideas and values of political texts and also traces the empirical and normative justifications provided by various political thinkers in the case of state, authority, justice, equality, political obligation and so on.

PS5CRT07: CORE VII: THEORIES AND PRINCIPLES OF PUBLIC ADMINISTRATION.

Course Objectives: The course provides basic understanding of the discipline of public administration. The major importance is on administrative theory, including non-western developing country's perspectives. Another emphasis is on the classical theories of administration is endows with some practical knowledge which is a link to the public policy. The course explores some contemporary social values and how the call for greater democratization and how far it is restructuring the realm of public administration. The course will also attempt to provide the student some practical hands-on understanding on contemporary administration and policy concerns.

PS5CRT08: CORE VIII: ENVIRONMENTAL STUDIES AND HUMAN RIGHTS

Course Objectives: Environmental Education encourages students to research, investigate how and why things happen, and make their own decisions about complex environmental issues by developing and enhancing critical and creative thinking skills. It helps to foster a new generation of informed consumers, workers, as well as policy or decision makers. Environmental Education helps students to understand how their decisions and actions affect the environment, builds knowledge and skills necessary to address complex environmental issues, as well as ways we can take action to keep our environment healthy and sustainable for the future. It encourages character building, and develop positive attitudes and values. To develop the sense of awareness among the students about the environment and its various problems and to help the students in realizing the inter-relationship between man and environment and helps to protect the nature and natural resources. To help the students in acquiring the basic knowledge about environment and the social norms that provide unity with environmental characteristics and create positive attitude about the environment.

PS5CRT09: CORE IX: METHODOLOGY OF RESEARCH IN POLITICAL SCIENCE

Course Objectives: The course intends to familiarise the students with basic concepts of the Research Methods in Political Science .It also provides an idea of preparing Research design, various techniques of Data collection, Data analysis and report writing.

PS5CRT10: CORE X: INTRODUCTION TO INTERNATIONAL RELATIONS

Course Objectives: This paper seeks to equip students with the basic intellectual tools for understanding International Relations. The course begins by historically contextualizing the evolution of the international state system before discussing the agency-structure problem through the levels-of-analysis approach. After having set the parameters of the debate, students are introduced to different theories in International Relations. Students are expected to learn about the key milestones in world history and equip them with the tools to understand and analyze the same from different perspectives.

PS6CRT11: CORE XI: COMPARATIVE POLITICS

Course Objectives: This is a foundational course in Comparative Politics. The purpose is to familiarize students with the basic concepts and approaches to the study of comparative politics. Since the idea is to introduce many aspects of politics while engaging with various themes of comparative analysis in developed and developing countries.

PS6CRT12: CORE XII: SOCIETY, STATE AND POLITICAL PROCESSES IN KERALA

Course Objectives: The course seeks to give the students an insight into the Society and State structure of Kerala. It also provides a detailed analysis of the socio-political evolution political processes, structures & social movements in the state of Kerala and to equip the student's skills in analyzing key issues in Kerala politics and society.

PS6CRT13: CORE XIII: ISSUES IN INTERNATIONAL POLITICS

Course Objectives: This course provides insights into significant issues that inherently occupy the global political space in the post-Cold War era. The course introduces students to the important debates within the globalization discourse. The course also offers vital understanding of contemporary global concerns such as environmental issues, the proliferation of nuclear weapons, global terrorism, human security.

PS6CRT14: CORE XIV: HUMAN RIGHTS

Course Objectives: The purpose of the course is to inculcate a comprehensive knowledge of the concept of Human Rights. For that, the course provides a better understanding of the origin, evolution of rights and various steps taken by the national and international agencies for the protection and promotion of the Human Rights. This course also aims at comprehensive knowledge of the concept in the Indian context through dealing with various Human Rights movements. Some of the debates prompt us to consider that there is no settled way of understanding concepts and that in the light of new insights and challenges which help the students for the better understanding of Human Rights.

OPEN COURSES

PS5OPT01: COURSE I.CONTEMPORARY ISSUES IN INDIAN POLITICS

Course Objective: Actual politics in India diverges quite significantly from constitutional legal rules. An understanding of the political process thus calls for a different mode of analysis - that offered by political sociology. It also familiarizes students with the working of the Indian state, paying attention to the contradictory dynamics of modern state power.

PS5OPT02: COURSE II. WOMEN IN INDIAN DEMOCRACY

Course Objective: The course is to help the students to understand the basics of the Indian Constitution. The aim of the course is to explain contemporary debates on women's participation in Indian politics. The course begins with a discussion on construction of gender in the Indian context. It covers problems and prospects of gender analysis of Indian society, economy and polity with a view to understand the structures of gender inequalities with special emphasis on local bodies. And it also aims to understand the issues with which contemporary Indian women's movements are engaged with.

PS5OPT03: COURSE III.GOVERNMENT AND POLITICS IN KERALA

Course Objective: The objective of this course is to familiarize students with the society and politics of Kerala. The course is intended to provide a comprehensive analysis of the social structure, social development, electoral politics and also the key issues in Kerala society and politics.

PS5OPT04: COURSE IV. HUMAN RIGHTS IN INDIA

Course Objective: The purpose of the course is to inculcate a comprehensive knowledge of the concept of Human Rights in the Indian context. For that, the course provides structure of the Indian constitution as well as it provides a better understanding of the origin, evolution of rights and various steps taken by the national and international agencies for the protection and promotion of the Human Rights. This course also aims at comprehensive knowledge of the concept in the Indian context through dealing with various Human Rights movements .It also deals with the problems confronted by the marginalised sections in the Indian context.

PS5OPT05: COURSE V. INTRODUCTION TO DEFENCE AND STRATEGIC STUDIES

Course Objective: This paper is designed to help students to develop a strong and analytical understanding of defence and strategic issues and also to examine a number of these issues in depth. This syllabus is designed to help the students for their higher studies option in the area of Defence and strategic studies.

CORE-CHOICE BASED

PS6CBT01: COURSE I. INDIA'S FOREIGN POLICY

Course Objective: The course aims to provide a theoretical and analytical understanding of India's Foreign Policy and this course's is also deals with the understanding of the domestic sources and the structural constraints on the genesis, evolution and practice of India's foreign policy. The course is intended to provide a comprehensive analysis of the India's changing identity as an emerging power in the post-cold war world.

PS6CBT02: COURSE II. GOVERNANCE: PROBLEMS AND PROSPECTS

Course Objective: This paper deals with concepts and different dimensions of governance highlighting the major debates in the contemporary times. There is a need to understand the importance of the concept of governance in the context of a globalising world, environment, administration, development. The essence of governance is explored through the various good governance initiatives introduced in India.

PS6CBT03: COURSE III. INTERNATIONAL ORGANIZATIONS AND WORLD AFFAIRS

Course Objective: This course is designed to provide students with the tools and knowledge necessary to understand the role of international organizations in global governance today. It examines the historical development, governance, activities, structure and performance of major global and regional organizations.

PS6CBT04: COURSE IV. DECENTRALISED DEMOCRACY

Course Objective: The course is to help the students to understand the basics of the Indian Constitution, Democracy, Decentralised democracy etc. It aims at comprehensive knowledge on local bodies in Indian context. And it also aims to provide a better understanding of the issues confronted by marginalised sections especially in the local bodies with inclusive understanding of the working of the Panchayati Raj institutions in some important states in India.

COURSE V. CONTEMPORARY POLITICAL ECONOMY

Course Objective: Given the growing recognition worldwide of the importance of the political economy approach to the study of global order, this course has the following objectives: 1. To familiarize the students with the different theoretical approaches; 2. To give a brief overview of the history of the evolution of the modern capitalist world; 3. To highlight the important contemporary problems, issues and debates on how these should be addressed.

Outcome of the course:

- Students get an awareness about the basic human rights
- The course will encourage the development of administrative skills in managing various posts.
- Critically asses the actions of actors in Political process and determine their motives.
- The course provides an opportunity to know about the various social problems faced by the community and find solution to it.
- The course will enhance academic and career opportunities.
- The course provides an opportunity to participate in the community development programmes.

HY1CMT01: COMPLIMENTARY COURSE: HISTORY-(SEMESTER 1) ROOTS OF THE MODERN WORLD

HY2CMT03: COMPLIMENTARY COURSE: HISTORY-(SEMESTER 2) TRANSITION TO THE CONTEMPORARY WORLD

Course Outcome:

- To understand large-scale and long-term historical developments of regional, interregional and global scope.
- To promote an understanding of the processes of change and development through which human societies have evolved to their present stage of development.
- To promote an understanding of the common routes of human civilizations and an appreciation of the basic unity of mankind.
- Students should understand the value of diversity.
- Students should believe in the equality of man irrespective of caste, creed, religion and colour.

EC 1/3CMT01: COMPLEMENTARY COURSE – ECONOMICS- PRINCIPLES OF ECONOMICS (III Semester)

EC 2/4CMT02: COMPLEMENTARY COURSE – ECONOMICS- BASIC ECONOMIC STUDIES (IV Semester)

Course Outcome:

- Develop the ability to explain core economic terms, concepts and theories.
- Helps to identify key elements of demand and supply model and use the model to critically analyse real world examples.
- Students will be able to describe the contemporary banking and monetary system.
- Equip the students to analyse fiscal and monetary policy decisions to counter business cycles by using macroeconomic models.
- Make the students to become effective economic analysts. Prepare them to analyse data to solve economic problems.
- Inculcate the talent to recognise suitable tools to make an accurate economic evaluation.
- Enhance and develop the critical thinking skills in students.

BACHELOR OF COMMERCE - B Com Model II (FINANCE AND TAXATION)

PROGRAMME'S MISSION AND OBJECTIVES:

B Com is one of the most wanted career oriented professional programs offered by the MG University. It opens up innumerable career options and opportunities to the aspiring students both in India and abroad .It also prepares one to start a business of his/her own in the capacity of an entrepreneur.

OBJECTIVES

1. Academic excellence: Our primary objective is to enable every student to cope up with the latest developments in contemporary, national and global level through effective transaction of the curriculum aspects.
2. Professional Excellence: We motivate and prepare the students for positions of leadership in business organizations at the local, national and international levels.
3. Total commitment: The Department is focused on the all-round development of the student's personality through proper education and exposure to the vast treasure of knowledge, spots facilities and by providing platforms for their socialization.
4. Holistic Development: Department provides exposure to learners in the latest trends in relevant branches of knowledge, competence and creativity to face global challenges.
5. Socially responsible Citizen: Department inculcates a sense of responsibility, social commitment, and moral accountability among the students through social activities to with exposure to human rights, value system, culture, heritage, scientific temper and environment.
6. Value- based Development. To impact quality and need based education, our objective is to sensitize the students to their changing roles in society through awareness raising activities.

PROGRAMME OUTCOME

- After completing the course, students would gain a thorough knowledge in the fundamentals of Commerce, Banking, Finance Taxation, Law, Cost Accounting etc.
- Students will be able to demonstrate progressive learning of various issues and tax forms related to individuals.
- Students will learn relevant financial accounting career skills, applying both quantitative and qualitative knowledge to their future careers in business.
- After the graduation immediately the student can work as an Accountant.
- B Com with finance and Taxation, the students will learn taxation in College itself, after graduation the student can work as a tax consultant.
- Fresh Commerce graduates can work as HR person or can also do their Masters in Human Resource. Later on they can work as an independent HR Person also.
- They can get a job in any Bank by registering on the banks website or by following the Employment news.

- Most of the BPO's/KPO's (Business Process Outsourcing /Knowledge Process Outsourcing) prefer Commerce graduates.
- One of the most common careers for commerce students is CA (Chartered Accountant).

SEMESTER DETAILS

SEMESTER	SUBJECT CODE	SUBJECT	OUTCOME	SPECIFIC OUTCOME
1	CO1CRT01	Dimensions and Methodology of Business Studies	To provide the methodology for pursuing the teaching learning process with a perspective of higher learning in business Studies	To provide a holistic, comprehensive and integrated perspective to business education
	CO1CRT02	Financial Accounting I	To familiarize the students with different accounting methods	To equip the students with the skill of preparing accounts and financial statements of various types of business units other than corporate undertakings
	CO1CRT03	Corporate Regulations and Administration	To familiarize the students about the Indian Companies Act 2013	To impart knowledge regarding the salient features of the Act and its provisions
	CO1CMT01	Banking and Insurance	To familiarize the students with the basic concepts and practice of banking and the principles of insurance	To expose the students in to the changing scenario of Indian Banking and Insurance
11	CO2CRT04	Financial Accounting II	To acquaint the students with the preparation of books of accounts of various types of business activities and its application	To enable students to prepare accounts of consignment, branches and departments
	CO2CRT05	Business Regulatory Framework	To acquaint the students with the legal framework influencing business decisions and operations	To enable the students to apply the provisions of business laws in business activities.

	C02CMT02	Principles of Business Decisions	To enable the students to acquire knowledge about business and its role in national development	
	CO2CRT06	Business Management	To provide comprehensive perspective on management theory and practice	To facilitate overall understanding of the different dimensions of the management processes
111	CO3CRT07	Corporate Accounts I	To expose the students to the accounting practices prevailing in corporate	To enable the students to prepare and interpret financial statements of joint stock companies.
	CO3CRT08	Quantitative Techniques for Business- 1	To enable the students to acquire knowledge in applying basic statistical tools in business decisions	To impart skills in applying statistical tools in business practice
	CO3CRT09	Financial Markets and Operations	To provide an in-depth knowledge on financial markets and its operations.	To provide a clear cut idea about the function8ing of Indian financial markets in general and capital market operations in particular
	CO3CRT10	Marketing Management	To provide a sound understanding of marketing management and their applications in the business	To equip the students in efficient management of business by giving in depth knowledge of managerial skills and principles
	CO3OCT01	Goods and Services Tax	To give the students a general understanding of the GST law in the country	Equip the students in practical perspective and employability to the students in the commercial tax practices.
	CO4CRT11	Corporate Accounts II	To develop the skill for the preparation of final accounts of specialized institutions.	To familiarize the students with the accounting practices prevailing in various specialized institutions

1V	CO4CRT12	Quantitative Techniques for Business- II	To develop the skill for applying appropriate statistical tools and techniques in different business situations	To enable the students to apply statistical techniques in business
	CO4CRT13	Entrepreneurship Development and Project Management	To equip the students to have a practical insight for becoming entrepreneur	To impart knowledge regarding starting of new ventures
	CO4OCT01	Financial Services	To provide a general awareness about the financial markets and services.	To familiarize the students with the structure and functioning of the financial markets and service sector in India.
V	CO5CRT14	Cost Accounting - 1	To impart knowledge of Cost Accounting system and measures of cost control.	To make the students learn cost accounting as a separate system of accounting
	CO5CRT15	Environment and Human Rights	To develop knowledge and understanding of the environment and enable the students to improve the quality of environment	To give awareness about the need and importance if environmental protection
	CO5CMT07	E- Commerce	To expose the students to E-Commerce and its potentialities	To impart knowledge about innovative e-business systems
	CO5OCT01	Income Tax- I	To impart basic knowledge about the concepts and practices of Income Tax law in India	To enable the students to compute the tax liability of individuals
	Open Course C050PO3	Fundamentals of Accounting	To impart basic knowledge about the concepts and principles of accounting	To enable the students to do some practical accounts of business
	CO6CRT17	Cost Accounting - II	To develop the skill required for the application of the methods and	To enable the students to apply the costing methods and techniques in

V1			techniques of costing in managerial decisions	different types of industries.
	CO6CRT18	Advertisement and Sales Management	To make the students aware of the strategy, concept and methods of advertising and sales promotion.	To give in-depth knowledge regarding the effect of advertiseme nt in business and its operations
	CO6CMT09	Income Tax- Assessment and Planning	To have an understanding of determination of total income and tax payable and to get an overview regarding returns to be filed	To develop application and analytical skill of the provisions of Income Tax
	CO6CRT20	Management Accounting	To develop provisional competence and skill in applying accounting information for decision making	To equip the students to interpret financial statements with specific tools of management accounting
	CO6OCT01	Income Tax- II	To equip the students with the practical skill and knowledge of income tax law and accounts	To familiarize the students with the procedure of income tax assessment
	CO6PR01	Project and Viva		

B.Sc. Chemistry

Objectives of the programme

- Read, understand and interpret chemical information – verbal, mathematical and graphical.
- Impart skills required to gather information from resources and use them.
- To give need based education in chemistry of the highest quality at the undergraduate level.
- Provide an intellectually stimulating environment to develop skills and enthusiasm of students to the best of their potential.
- Learn Chemistry through lectures, laboratory sessions, tutorials and interaction with eminent academicians.
- Use Information Communication Technology to gather knowledge at will.

- To bridge the gap between plus two and post graduate levels of Chemistry by providing a more complete and logical framework in almost all areas of basic Chemistry.
- Perform experiments and interpret the results of observation.
- Develop laboratory skills for qualitative and quantitative analysis, organic synthesis, distillation, filtration, crystallization and chromatography.
- Safe working procedures, chemical toxicology, environmental concerns, handling of chemicals, glassware and range of instruments available at graduation level.
- Kindle the urge for higher studies, entrepreneurship and lifelong learning.

SEMESTER I

CH1CRT01 – GENERAL AND ANALYTICAL CHEMISTRY

Objectives of the course

- To understand the methodology of chemistry
- To familiarize the periodic properties and periodic table
- To get concrete knowledge on analytical chemistry
- To get acquaintance with chromatographic techniques
- To evaluate analytical data

SEMESTER II

CH2CRT02 – THEORETICAL AND INORGANIC CHEMISTRY

Objectives of the course

- Develop a deep knowledge on atomic structure
- To understand various theories of chemical bonding
- Get concrete knowledge on s-block, p-block, d-block and f-block elements

CH2CRP01 - VOLUMETRIC ANALYSIS

Objectives of the course

- Get practice with acidimetry, alkalimetry, complexometry titrations and redox titrations – permanganometry, dichrometry, iodometry and iodimetry.
- Able to apply the volumetric knowledge in commercial samples.

SEMESTER III

CH3CRT03- ORGANIC CHEMISTRY I

Objectives of the course

- Understanding the fundamentals of organic chemistry and organic reactions
- Identifying the rules related to IUPAC nomenclature
- Appreciating the beauty of stereochemistry of organic molecules in terms of various conformations and their stability
- Understanding the various reactions involved in the synthesis of aliphatic and aromatic hydrocarbons
- Familiarising the basics of pericyclic reactions with examples

SEMESTER IV

CH4CRT04- ORGANIC CHEMISTRY II

Objectives of the course

- Understand the various functional organic compounds and their synthesis
- Familiarise the fundamental difference in chemical and physical properties of different functional groups
- Able to distinguish between organic compounds using various organic reactions
- Learn rearrangement reactions with their detailed mechanisms

CH4CRP02 - QUALITATIVE ORGANIC ANALYSIS

Objectives of the course

- Systematically analyse organic compound and preparation of solid derivative
- To determine the physical constants of solids and liquids – melting and boiling points
- To understand the reactions of various functional groups

SEMESTER V

CH5CRT05-ENVIRONMENT, ECOLOGY AND HUMAN RIGHTS

Objectives of the course

- To understand the fragility and sensitivity of our environment and the importance of its protection.
- To promote environmental awareness
- To foster a sense of responsibility and proactive citizenship

CH5CRT06- ORGANIC CHEMISTRY –III

Objectives of the course

- To give concrete idea about nitrogen containing compounds and their synthesis.
- To familiarize with the vast world of heterocyclic compounds
- To provide a brief idea about active methylene compounds and drugs.
- To get acquainted with carbohydrates, polymers and dyes.

CH5CRT07 – PHYSICAL CHEMISTRY - I

Objectives of the course

- Behaviour of ideal gases and the real gases. A deeper look on the distribution of velocities and energies among the molecules, an overview on the collision properties.
- To develop a qualitative idea about the intermolecular forces in liquid, to know in detail about viscosity and surface tension and its determination
- A review on the nature of solid state, different crystal systems, analysis of cubic crystals, to have a deep idea on the different types of ionic compounds and to know in detail about the liquid crystals.
- Describes the interfacial phenomenon of adsorption, explains different types of adsorption and its significance, enumerate the nature of colloidal state, its preparation and properties.

CH5CRT08- PHYSICAL CHEMISTRY-II

Objectives of the course

- Gaining a strong foundation in Quantum chemistry
- Developing a scientific aptitude to link experiment with theory
- Familiarisation with fundamentals of various spectroscopic techniques
- To equip the learner with basic skills in analysing and interpreting spectrum
- Understand the basic principles of microwave, electronic, IR, NMR and ESR spectroscopy

CH5OPT01- CHEMISTRY IN EVERYDAY LIFE

Objectives of the course

- To understand the basic concepts of Food Additives, Soaps, Detergents and Cosmetics.
- To familiarize about Plastics, Paper, Dyes and Drugs.
- To Learn about Nanomaterials and the interdependence between Chemistry and Agriculture

SEMESTER VI

CH6CRT09-INORGANIC CHEMISTRY

Objectives of the course

- To learn in detail about the concepts and applications of coordination Chemistry.
- To understand the basic concepts of Organometallic Chemistry.
- To familiarize about Bioinorganic Chemistry.
- To get brief idea of Boron compounds, Interhalogen and Noble gas Compounds

CH6CRT10- ORGANIC CHEMISTRY –IV

Objectives of the course

- To introduce students to the world of natural products, lipids, vitamins, steroids and hormones.
- To familiarize the concepts of amino acids, peptides, proteins, enzymes and nucleic acids
- To provide an elementary idea about supramolecular chemistry.
- To get acquainted with organic photochemistry.
- To equip the students to interpret spectra of organic molecules using various spectroscopic tools like UV, IR, NMR and Mass spectroscopy.

CH6CRT11-PHYSICAL CHEMISTRY –III

Objectives of the course

- To learn in detail about the concepts and applications of thermodynamics.
- To understand the basic concepts of Chemical, Ionic and Phase Equilibria
- To get brief idea of Chemical Kinetics

CH6CRT12- PHYSICAL CHEMISTRY –IV

Objectives of the course

- Develop a critical knowledge of various binary solutions and their distillation behaviour.
- To get acquainted with Nernst distribution law and it's applications
- To impart a foundation on the concept of chemical potential
- Developing scientific temper by gaining an understanding of electrical conductance and electrochemical cells
- To get introduced to the laws of photochemistry
- Classifying various molecules into point groups based on group theory

CH6CBT01- POLYMER CHEMISTRY

Objectives of the course

- Introduce the concept of polymer materials – history.
- To get acquainted with the mechanisms of polymerization and its techniques
- To acquire knowledge of the physical properties of polymers and the various reactions.
- To get introduced to polymer degradation, polymer processing, commercial and specialty polymers.

CH6CRP03- QUALITATIVE INORGANIC ANALYSIS

Objectives of the course

- To introduce the systematic way of analyzing inorganic mixtures using semi micro method.
- To study the reactions of various radicals with a view to identify and confirm them, from a mixture of two acid and two basic radicals.

CH6CRP04-ORGANIC PREPARATIONS AND LABORATORY TECHNIQUES

Objectives of the course

- To master basic laboratory techniques like crystallization, distillation, solvent extraction
- To perform different types of Organic Preparations
- To separate a component from a mixture of compounds using TLC and column Chromatography

CH6CRP05- PHYSICAL CHEMISTRY PRACTICALS

Objectives of the course

- Gain an ability to determine the viscosity of a solution.
- To develop know-how about the concept of heat of neutralisation
- To apply relevance of colligative properties
- To find out the concentration of a solution using conductometric and potentiometric titrations
- To get well acquainted with using spreadsheet program

CH6CRP06- GRAVIMETRIC ANALYSIS

Objectives of the course

- To provide a fundamental idea regarding the application of gravimetry as a tool for quantitative estimation.

CH6PR01- PROJECT & INDUSTRIAL VISIT AND COMPREHENSIVE VIVA VOCE

Objectives of the course

- To involve in a project work to instigate research aptitude.
- To visit an industry to understand how the academic study translates to application in industry.
- Testing the knowledge acquired through the three years of undergraduate study thus ensuring a deep routed knowledge of the nuances of chemistry.

COMPLEMENTARY COURSES IN CHEMISTRY

SEMESTER I

CH1CMT01 - BASIC THEORETICAL AND ANALYTICAL CHEMISTRY

Objectives of the course

- To have a basic knowledge about the atomic structure and chemical bonding
- To study the fundamental concepts of chemistry including periodic properties and chemical and ionic equilibrium
- To develop a deep knowledge about the analytical techniques involved in the laboratory.
- To understand different types of chromatographic techniques and the principle behind chromatography

SEMESTER II

CH2CMT02 - BASIC ORGANIC CHEMISTRY

Objectives of the course

- To study the fundamental concepts of organic chemistry
- To have deep knowledge about the organic reaction mechanisms
- To understand about the stereoisomerism and stereochemistry of organic compounds
- To know in detail about the natural and synthetic polymers, environmental hazards of polymer revolution and recycling of plastics

SEMESTER III

CH3CMT03- PHYSICAL CHEMISTRY – I (For students who have opted Physical Sciences and Geology as Main)

Objectives of the course

- To enable the students to get a clear idea about the molecular structure
- To make students capable of understanding and studying electrical and nuclear properties of molecules

CH3CMT04- INORGANIC AND ORGANIC CHEMISTRY (For students who have opted Life Sciences and Family & community Science as core)

Objectives of the course

- Identifying and familiarising various heterocyclic compounds and their chemical properties.
- Developing a critical understanding about the role and application of pesticides, fungicides and germicides
- Enhancing the fundamental understanding of nucleus and nuclear forces in terms of nuclear chemistry
- Appreciating the chemistry of drugs and its pharmacological applications

SEMESTER IV

CH4CMT05- PHYSICAL CHEMISTRY – II (For students who have opted Physical Sciences and Geology as Main)

Objectives of the course

- To promote understanding of the basic facts and concepts in spectroscopy and to develop interest in students to study the structure and properties of matter.
- To help the students to get a basic idea about spectroscopy
- To enable the students to study the rules governing chemical reactions and factors influencing them.

CH4CMT06 -ADVANCED BIO-ORGANIC CHEMISTRY (For students who have opted Life Sciences and Family & community Science as core)

Objectives of the course

- To understand the basic concepts of Terpenoids, Alkaloids, Lipids, Soaps and Detergents.
- To familiarize about amino acids, proteins, enzymes and nucleic acids.
- To learn about carbohydrates, Vitamins, Steroids and Hormones

CH4CMP02- PHYSICAL CHEMISTRY PRACTICALS (For students who have opted Physical Sciences and Geology as Main)

Objectives of the course

- To determine viscosity, CST, Transition temperature etc
- To find the heat of neutralization, kinetics of a reaction
- To estimate the mass of ion or compound using conductometric and potentiometric titrations

CH4CMP03- ORGANIC CHEMISTRY PRACTICALS (For students who have opted Life Sciences and Family & community Science as core)

Objectives of the course

- To detect different functional groups of organic compounds
- To find the physical constants like melting point and boiling point

MSc Chemistry

Objectives of the course

- Provides a fundamental insight into the changes taking place in and around our fascinating nature.
- Understand the issues of environmental contexts and sustainable development
- Through lectures, laboratory work, exercises, project work, and its independent master's thesis, students will gain knowledge about relevant working methods for research, industry, administration, and education.
- Lays the foundation for doctoral programs in Chemistry.
- Acquire the ability to engage in independent and lifelong learning in the broadest context
- Aquires ability to synthesise , separate and characterise compounds using laboratory and instrumentation techniques
- Develops analytical skills and problem solving skills requiring application of chemical principles
- Know and predict the structure and bonding in molecules/ions
- Understand theoretical concepts of instruments that are commonly used in most chemistry fields as well as interpret and use data generated in instrumental chemical analysis
- Develop an understanding of eco friendly chemical processes and impact of chemistry on health and environment

Course Outcome

Semester I

CH1C01 ORGANOMETALLICS AND NUCLEAR CHEMISTRY

Objectives of the course

- To study the structure, synthesis and reactions of commonly known organometallic compounds
- To know the important applications of organometallic compounds in catalysis
- To study the important aspects of organometallic polymers
- To understand the functions and applications of bioorganic compounds
- To have a basic idea about nuclear Chemistry and its applications

CH1C02 STRUCTURAL AND MOLECULAR ORGANIC CHEMISTRY

Objectives of the course

- To recollect and familiarize the basic concepts in organic chemistry
- To develop a deep knowledge about the physical organic chemistry
- To have a well defined idea on organic photochemistry
- To have an authenticated idea of stereochemistry of organic compounds
- To know and understand the conformational analysis of organic compounds

CH1C03 QUANTUM CHEMISTRY AND GROUP THEORY

Objectives of the course

- Students will be able to revise and update the fundamental ideas, mathematical concepts and application of group theory to molecular systems
- Understand and solve particle in a box model, harmonic oscillator model, particle on a ring and gain a deep understanding in the application of tunneling effect.
- Application to real system – hydrogen atom.
- Expertise in categorizing common molecules into various point groups and applying GOT to derive the character tables of various point groups
- To understand the idea of space groups and to learn the theory of molecular symmetry.
- Its application of electronic and vibrational spectra.

CH1C04 CLASSICAL AND STATISTICAL THERMODYNAMICS

Objectives of the course

- To know the basic concepts in classical thermodynamics and to learn the thermodynamic aspects of various processes and reactions
- To understand the different aspects of statistical thermodynamics and its applications.

Semester II

CH2C05 COORDINATION CHEMISTRY

Objectives of the course

- To know the structure and bonding of important coordination compounds
- To understand the magnetic properties of complexes and to know how magnetic moments can be employed for the interpretation of their structure
- To get an overview about the stereochemistry of coordination compounds
- To study the reaction mechanisms of metal complexes.

- Enable the students to elucidate the structure of metal complexes using various spectroscopic methods
- To get an idea about the basic coordination chemistry of Lanthanides and Actinides

CH2C06 ORGANIC REACTION MECHANISM

Objectives of the course

- To be familiarise with the mechanism of organic reactions and different factors which affect the reaction rate.
- To understand the role of various reaction intermediates like carbanion, carbocation, carbenes, radicals etc. in organic reactions
- To get insight into the chemistry of carbonyl compounds.
- To know the different types of concerted reactions in organic chemistry and orbital correlation approaches.

CH2C07 CHEMICAL BONDING AND COMPUTATIONAL CHEMISTRY

Objectives of the course

- To understand the requirement of approximation methods in quantum mechanics
- To gain the knowledge to apply important approximation methods to problems in quantum mechanics
- To gain insight in to valance bond theory molecular orbital theory and the concept of hybridisation
- To know the applications of group theory in chemical bonding
- To get an exposure to the emerging world of computational chemistry
- To have a basic idea about computational chemistry calculations.

CH2C08 MOLECULAR SPECTROSCOPY

Objectives of the course

- To know the basics principle of different techniques employed in molecular spectroscopy
- To study the origin, instrumentation and important applications of Microwave, IR, Raman, UV, NMR, EPR and EQR techniques

SEMESTERS 1 & 2 PRACTICALS

CH2P01 INORGANIC CHEMISTRY PRACTICAL-1

Objectives of the course

- To be able to identify and separate less familiar ions such as Tl, W, Se, Mo, Ce, Th, Ti, Zr, V, U etc.
- To be able to estimate colorimetrically ions such as Fe, Cu, Ni, Mn, Cr etc.

CH2P02 ORGANIC CHEMISTRY PRACTICAL-1

Objectives of the course

- To learn the separation and purification of an organic mixture by chemical/solvent separation methods.
- To gain the knowledge to draw the structure of compounds using Chemdraw software

CH2P03 PHYSICAL CHEMISTRY PRACTICAL-1

Objectives of the course

- To verify the some important principles in physical chemistry and to determine various physical properties
- To learn to carry out some simple computational chemistry calculations

Semester III

CH3C09 STRUCTURAL INORGANIC CHEMISTRY

Objectives of the course

- To understand the structure and different properties of solids
- To learn the important aspects of inorganic chains, rings, cages and metal clusters.
- To understand the chemistry and applications of materials such as glasses, ceramics, composites, nanomaterials etc.

CH3C10 ORGANIC SYNTHESES

Objectives of the course

- To know the various methods employed for reactions like oxidation, reduction, carbocyclic and heterocyclic ring formation etc.
- To get insights into novel reactions and reagents in organic synthesis
- To know the utility of protecting group strategy in organic synthesis

- To be familiarise the students with the basic principles of retro syntheses, biosynthesis and biomimetic synthesis.

CH3C11 CHEMICAL KINETICS, SURFACE CHEMISTRY AND PHOTOCHEMISTRY

Objectives of the course

- To learn the different theories of reaction rates and factors affecting reaction rates
- To have an idea about the different types of catalysis and their mechanisms
- To study the chemistry of surfaces and different types of surface phenomena
- To get an idea about the various techniques employed for the characterisation of surfaces
- To know the general properties of colloids and macromolecules
- To have an idea about the important aspects of photochemistry

CH3C12 SPECTROSCOPIC METHODS IN CHEMISTRY

Objectives of the course

- To get a deep insight into the various spectroscopic methods used for the characterisation of organic compounds.
- Enable the students to elucidate the structure of compounds by analysing the spectral data

Semester IV

ELECTIVE COURSES

CH4E01 ADVANCED INORGANIC CHEMISTRY

Objectives of the course

- To understand the applicability of group theory in coordination chemistry
- To know the utility of spectroscopic methods such as IR, Raman, EPR and Mossbauer techniques for the characterisation of inorganic complexes
- To understand the photochemistry of inorganic compounds
- Introduce the students the emerging field of nanochemistry and its fascinating aspects
- To study the acid –base concept in non-aqueous media and reactions in non-aqueous media
- To get a brief idea about emerging branches in chemistry like supramolecular chemistry, nanochemistry, medicinal chemistry, polymer chemistry and its applications

- To learn the principles of green chemistry and to know the various green protocols in organic synthesis
- To study the important stereoselective transformations in organic synthesis
- To know the basic aspects of natural product chemistry.
- To get an overview about research process and to gain the ability to apply various research methods and techniques.

CH4E03 ADVANCED PHYSICAL CHEMISTRY

Objectives of the course

- To get an overview about the structure and properties of of solid crystals and liquid crystals
- To know the characterisation of crystals using X-Ray diffraction
- To learn the important aspects of gaseous state and electrochemistry
- To study the principle, instrumentation and applications of diffraction method, fluorescence spectroscopy, atomic spectroscopy and electroanalytical techniques.

PRACTICAL- SEMESTERS III AND IV

CH4P04 INORGANIC CHEMISTRY PRACTICAL-2

Objectives of the course

- Enable the students to estimate the binary mixtures of metallic ions by volumetric and gravimetric methods
- To acquire the skill to analyse some common alloys and ores.

CH4P05 ORGANIC CHEMISTRY PRACTICAL-2

Objectives of the course

- To gain the skill to prepare organic compounds using greener protocols
- Enable the students to prepare organic compounds via two step synthetic sequences
- To know about enzyme/coenzyme catalysed reactions

CH4P05 PHYSICAL CHEMISTRY PRACTICAL-2

Objectives of the course

- Enable the students to determine the various physical properties using simple instrumental methods like polarimetry, refractometry etc.

BA MALAYALAM

Semester	Subject code	Subject	Outcome
I	ML1CCT01 Common course	Kadha sahithyam	To familiarise students the various prose forms like Novel, Short stories. Detailed study of certain short stories and Novels and help to generate knowledge and identify literary forms.
	ML1CRT01 Core	Modern Poetry	To know the different expressions in Malayalam poetry . to develop the attitude of literature among students . To enhance students to criticize poetry. To know about cyber literature.
	ML1CMT01 Complimentary	Malayala padanathinte Reethy sasthram	To introduce about different methodologies in Malayalam literature and language study. Help students to create awareness in different forms in languages.
	ML1CMT02 Complimentary	Nadakavum Cinemayum	To know about artistic history of Drama and Cinema . To understand Drama and Cinema individually. To generate awareness in aesthetics and history of Drama and Cinema.
II	ML2CCT02 Common course	Poetry	To generate awareness of history of poetry. To develop the attitude of literature among students. To understand the common features in poetry .
	ML2CRT02 Core	MalayalaKavitha Ezhuthachan muthal Kavithrayam vare	To understand about Kilippat poetry and its aesthetic views. To understand different poetry movements . Importance of Ezhuthachan in Malayalam poetry literature. Detailed study of Kavyaprasthanas.
	ML2CMT03 Complimentary	Modern world poetry	To know and appreciate the world around us. It is the way to under stand how language and symbol systems work in Modern poetry. To know about the influence of western poets and aesthetics in Indian poetry –also Kerala poetry.
	ML2CMT04 Complimentary	Folkloristics	To study the common features of Folklore . Introduce the history , origin and development of Folkloristics. Its purpose though is to produce historical , artistical information regarding the origins of a group of people.

Semester	Subject code	Subject	Outcome
III	ML3CCTO3 Common course	Drishyakalasahithyam	Familiarise visual arts . Detailed study of origin and growth of the art form Kadhakali. Enhance knowledge of students about the visual art forms and to identify them. Help students to create awareness in stage and performance. Detailed study about history of Cinema screen play writing.
	ML3CRTO3 Core	Kerala culture – earlier stage	To understand about the formation , changes and cultural process in ancient Kerala. Detailed study of Kerala culture.
	ML3CMTO5 Complimentary	Oru ezuthukaran/ ezuthukari - Madhavikkutty	To give the deep awareness of Madhavikkutty who is an Indian English poet and Malayalam author. To create the knowledge of her narrations and autobiographies.
IV	**ML4CCT04** Common course	Malayalagadyarachanakal	To familiarise students the various forms like Novel, Short stories, Essays, Playwrite, Criticism etc .Detail study of certain novels and help to generate knowledge and identify literary forms.
	ML4CRT04 Core	**Keralasamskaram-Uttarakhattam**	To give awareness of colonialism and modernisation of kerala in northern ghats. To know the rules and administrative forms of british apply in kerala. To know about sathyagraha's in kerala .Understand missionary activities, kerala cabinet, new social movements etc
	ML4CMT06 Complimentary	**Aadhunikamalayalabhasha**	To brief study about the formations of Malayalam language in modernity. To learn about the contemporary growth of language in modern period. Help students to create the awareness of modern languages.
	ML5CRT05 Core	**Paristhithivigyanavum Manushyavakasapadanavum**	To create eco friendly mind .To give proper knowledge about environmental issues .To create realisation about to students. So that they can take ecological solution as their social responsibility.
	ML5CRT06 Core	**Sahithyameemamsa**	To give general knowledge about esthetics views of Indian and european theories. To realise the importance of theoretical transalations in literature. To understand philosophical ideas of literature.

V	**ML5CRT07** Core	**Cherukadha, Novel**	To understand different stages of evaluation of prose in Malayalam literature. To study contemporary thoughts like dalith, feminism, ecology
	ML5CRT08 Core	**Bhashasathram**	To understand common features of language and linguistics. To differentiate linguistics and grammer
	ML5OPT02 **OPEN**	**Madhyamapadanam**	Introduce the importance of different medias.
VI	**ML6CRT09** Core	**Keraleeya drishyakala**	To know about the importance and social relevance of kerala visual artforms. Detailed study of origin and growth of classic and folk artforms. Help students to create awareness is stage and performance.
	ML6CRT10 Core	**Ancient Literature**	To acquainted with prose,poetry and mixture in ancient literature. To understand the cultural representation of ancient literature in the society. To encourage the higher studies and research in ancient literature.
	ML6CRT11 Core	**Gadhyasahithyam,Niroopanam**	To give awareness about the sequencial growth of Malayalam criticism. To introduce the best critic and prose models in Malayalam. Along with that to realise biography ,memories and experience in literature.
	ML6CRT12 Core	**Vyakaranam,Bhashacharithram**	Detail study about formation and stricter of syntax and enable to apply it. To know about the generation evolution of the language. Understand the importance of learning grammar in literature studies.
	ML6CBT01 **Elective**	**Malayalathile Streerachanakal**	Detail study of feminism and pennezuth. To analyze about the situations of women through women writing.

M A MALAYALAM

SEMESTER	SUBJECT CODE	SUBJECT	OUTCOME	
I	PC1	Kavitha:Pracheenam, Madhyakalam	To generate the awareness of ancient &middle history of poetry. To develop the attitude of literature in critical study	
	PC2	Malayabhasha-Charithravum Varthamanavum	To enhance students to criticize the history of language.	
	PC3	Kathasahithyam	The general awareness of the narrative forms of story.	
	PC4	Sahithyacharithraviganeeyem	To know about the Eastern & Western aesthetics& understand the form of these literary devices.	
	PC5	Samskrutham-Bhashayum Sahithyavum	To enable students in conceving knowledge in Sanskrit grammar court epics peculiarities of Sanskrit drama, SanskritPhilosophy ,wise stories.	
II	PC6	Malayalakavitha -Aadhunikam-Onnaam Ghattam	Examine the fictional variations that have visible in modern &so modern poetry.	
	PC7	Bhashasasthram	To evaluate the methods of basic concepts.It is also enable to Malayalam linguistic learning critically.	
	PC8	Bharatheeyasahithyasithanthngal	To enable the learns to analyse ,evaluate &learn the enjoyment of poetry by familiarizing the fundamentals of oriental poetic metaphysics	

	PC9	Bharatheeyetharasahithyasidhanthangal	To analyze the historical context of western literary theories & concepts that make the thought premises.	
	PC10	Novelsahithyam	It tries to keep learning of theoretical concepts ,approach &Experiments .	
III	PC11	Malayalakavitha-Aadhunikam -- Randam Ghattam	Examine the fictional variations that have visible in modernism, post -modernism & modern poetry.	
	PC12	Malayalabhashavyakaranam	To exam explain &to acquire the applicable possibilities that changed the learning of grammar,to enable the theoretical approaches ,grammatical concepts of understand the Indian languages, particularly dravidiyan languages in multi seasonal time.	
	PC13	Malayalaniroopanam	To make the learns of detect the general characteristics knowledge ,differences of review.	
	PC14	Drusyakalasahithyam	Examine&evaluate the poetic illusions&their artforms that representsthe heritage &culture of Kerala.	
	PC15	Keralasamskarapadanam	It tries an added learning of Kerala history to poetry & language at the time.	
IV	PC16	Nadakavum Cinemayum	To detailed leaving of aesthetics& political history of dramas & cinemas.	
	PE1	Genasamskarapadanam	To give the awareness of demographic study. Detailed study of origin	

			and development of this study.	
	PE2	Paribhasha-Sidhanthavum Prayogavum	To introduce translation as a main tool for understanding socio-political transaction.To practice translation from English to Malayalam.	
	PE3	Sthreepaksha rachanakal	Detail study of feminism and pennezuth. To analyze about the situations of women through women writing	
	PE4	Puthusahithya sameepanankal.	To understand the changes of knowledge distribution of current centuary.To know deeply the changing pattern of the knowledge and the the causes of the different changing knowledge system.	

B Sc MATHEMATICS

Semester	Code	Title of the course	Course Outcome
1	MM1CRT01	Foundations of Mathematics	1.To develop knowledge in basic concepts of Mathematics. 2 .Understand the concepts of mathematical logic, sets, functions, relations and partial orderings. 3.Apply proof techniques to prove simple theorems. 4. Determine the solution of polynomial equation upto 4th degree.
2	MM1CRT01	Analytic Geometry, Trigonometry & Differential Calculus	1.Understand the concept of conic sections 2 Solve problems in analytic geometry

			3 Solve problems in circular and hyperbolic functions, separation into real and imaginary parts and summation of infinite series. 4 Find the higher order derivative of standard functions and the product of two functions using Leibinitz Theorem 5 Find limits of indeterminate forms
3	MM3CRT0 1	Calculus	1.Solve problems involving Taylor's series and Maclaurin's series. . 2 Solve problems involving concavity, points of inflection, Curvature, Evolute, Involute, Asymptotes and Envelopes. 3 Compute partial derivatives 4 Apply Chain rule and Lagrange multiplier method. 5 Evaluate single integrals and multiple integrals. 6 Construct regions of integration and write limits of integration.
4	MM4CRT04	Vector Calculus, Theory of Numbers & Laplace Transform	1.vector differentiation. 2 Carry out vector integration. 3 Apply Green's Theorem, Stoke's Theorem and Divergence Theorem. 4 Understand basic properties of congruence . 5 Understand Fermat's Theorem, Wilson's Theorem and Euler's Phi function. 6 Find Laplace Transforms of functions. 7 Apply Laplace Transforms to solve Ordinary Differential Equations . 8 Understand convolution. 9 Produce Laplace Transform of integral of a function.
5	MM5CRT01	Mathematical Analysis	1.To understand the basic concepts of finite and infinite sets and properties of real numbers 2 Solve problems related to limits of sequences and series 3 Understand the concepts of convergence and divergence of sequences and series 4 Solve problems related to limit of a function
5	MM5CRT02	Differential Equations	1.Studythenature of solutions of a differential equation. 2 Solve Separable equations, Homogeneous equations, Exact equations and first order linear equations. 3 Find orthogonal trajectories of family of curves. 4 Apply method of variation of parameters, method of undetermined coefficients and use of a known solution to find the other, to solve a second order linear differential equation. 5 Generate power series solution of differential equation. 6 Apply Frobenius method to solve differential equations. 7 Generate partial differential equations by eliminating arbitrary constants and arbitrary functions. 8 Apply Lagrange method to solve partial differential equations
5	MM5CRT03	Abstract Algebra	1Understand Binary Operations, Group, Ring, Field, Integral Domain and Ideal.

			2 Understand the concepts of Homomorphism and Isomorphism. 3 Understand normal subgroup, simple group, cyclic group, permutations, cosets. 4 State and prove Cayley's Theorem, Theorem of Lagrange, Fundamental homomorphism Theorem. 5 Construct group tables and subgroup diagrams. 6 Construct product of two permutations and write orbits of permutations. 7 Understand zero divisors and characteristic of a ring
5	MM5CRT04	Environmental mathematics and human rights	1Understand how their decisions and actions affect the environment 2 Builds knowledge and skills necessary to address complex environmental issues, as well as ways we can take action to keep our environment healthy and sustainable for the future, encourage character building, and develop positive attitudes and values. 3 Develop the sense of awareness among the students about the environment and its various problems and to help the students in realizing the inter-relationship between man and environment for protecting the nature and natural resources. 4 Acquiring the basic knowledge about environment and to inform the students about the social norms that provide unity with environmental characteristics and create positive attitude about the environment. 5 Understand about the Mathematics of nature 6 Awareness about human rights and duties
5	MM5OPT0 2	Applicable Mathematics (Open Course)	1Solve logical problems for competitive examinations 2 Solve Quadratic equations 3 Understand permutation and combination and its simple applications 4 Solve problems on trigonometry 5 Solve problems related to interest computing, time and work, work and wages, time and distance 6 Understand exponential and logarithmic series 7 Solve problems on elementary mensuration and elementary algebra 8 Understand the basic concepts of differential calculus 9 Find derivatives using basic formulas, product rule, quotient rule an function of function rule
6	MM6CRT01	Real Analysis	1.To understand the concept of continuous function 2 Solve problems related to monotone and inverse functions 3 State and prove Mean Value Theorem and Taylor's theorem 4 Problems related to derivatives and L'Hospital's rule 5 Understand the concept of Reimann integration

6	MM6CRT02	Graph Theory & Metric Spaces	1.study the basic concepts of graph theory – definition of a graph, properties of vertices and edges 2 Application of graph theory to solve real life problems 3 Understand the basic concepts of metric space, open set, closed set 4 Solve problems related to convergence and completeness 5 State and prove Baire's theorem and other theorems related to continuous mapping
6	MM6CRT03	Complex Analysis	1.Understand the basic concepts of complex numbers 2 Conceive the concept of analytic functions 3 Understand the elementary complex functions and their properties 4 Understand the theory and techniques of complex integration 5 Understand the theory and application of the power series expansion of analytic functions 6 Evaluate improper integrals using residue theorem
6	MM6CRT04	Linear Algebra	1.To understand algebra of matrices. 2 Solve system of linear equations by applying the process of Gaussian elimination, Hermite method. 3 Find rank, left and right inverse of a matrix. 4 Construct normal form of matrices. 5 Check whether a matrix is invertible, orthogonal, diagonalizable. 6 Understand vector spaces, spanning set, linear independence, basis, linear mappings, linear transformations, linear isomorphism, kernel, rank, nullity and nilpotency. 7 Determine eigen values and their algebraic multiplicity, eigen vectors, characteristic polynomial. 8 Find image of function, kernel of function, basis for image and basis for kernel. 9 Check whether a mapping is injective, surjective. 10 State and prove Dimension Theorem.
6	MM6CBT01	Operations Research	1.Understand graphical method and simplex method 2.To understand duality in programming and solve problems 3.To solve transportation and assignment problems 4.study the theory of games
6	MM6PRT01	Project	1.Understand the applications of Mathematics 2 Develop effective communication skills 3 Develop typesetting skills 4 Explore new domains in Mathematics 5 Create Mathematical models of real life problems

Complimentary courses

1	MM1CMT0 1	Partial Differentiation , Matrices , Trigonometry and Numerical Methods	1 Understand functions of several variables 2 Find domain and range of function s 3 Apply chain rule to find partial derivatives 4 Generate normal form of Matrix 5 Find rank, Characteristic matrix , Characteristic equations , Characteristic roots , and characteristic vectors of a square matrix
2	MM2CMT0 1	Integral Calculus and Differential equations	1Apply integration to find volume ,arc length ,area of surface of revolution 2 Solve problems involving double and triple integrals 3 Apply double integrals to find area 4 Solve Ordinary Differential Equations 5 Generate Partial Differential Equations
3	MM3CMT0 1	Vector Calculus , Analytic Geometry and Abstract Algebra	1.Solve problems involving vector valued functions 2 Understand integration in vector fields 3 Apply Green's Theorem , Stroke's Theorem and Divergence Theorem 4 Solve problems in conic sections 5 Understand Groups , Subgroups and Homomorphism
4	MM4CMT01	Fourier Series ,Laplace Transforms and Complex Analysis	1. Solve problems involving Fourier Series and Legendre polynomials . 2 Apply Power series method to solve differential equations . 3 Find Laplace Transform of functions 4 Apply Laplace Transform to solve differential equations 5 Solve problems involving complex numbers and functions 6 Understand complex Integration

B. Sc. PHYSICS

Program outcome

It is recognized that curriculum, course content and assessment of scholastic achievement play complementary roles in shaping education. The assessment should support and encourage the broad instructional goals such as basic knowledge of the discipline of Physics including phenomenology, theories and techniques, concepts and general principles. This should also support the ability to ask physical questions and to obtain solutions to physical questions by use of qualitative and quantitative reasoning and by experimental investigation. The important student attributes including appreciation of the physical world and the discipline of Physics, curiosity, creativity and reasoned skepticism and understanding links of Physics to other disciplines and to

societal issues should gave encouragement. With this in mind, we aim to provide a firm foundation in every aspect of Physics and to explain a broad spectrum of modern trends in physics and to develop experimental, computational and mathematics skills ofstudents.

The programme also aims to develop the following abilities:

1. Read, understand and interpret physical information – verbal, mathematical and graphical.
2. Impart skills required to gather information from resources and use them.
3. To give need based education in physics of the highest quality at the undergraduate level.
4. Offer courses to the choice of the students.
5. Perform experiments and interpret the results of observation, including making an

assessment of experimental uncertainties.

6. Provide an intellectually stimulating environment to develop skills and enthusiasms of students to the best of their potential.
7. Use Information Communication Technology to gather knowledge at will.
8. Attract outstanding students from all backgrounds.

The syllabi are framed in such a way that it bridges the gap between the plus two and post graduate levels of Physics by providing a more complete and logical framework in almost all areas of basic Physics.

By the end of the first year (2^{nd} semester), the students should have attained a common level in basic mechanics, a secure foundation in mathematics, Chemistry(otherwise specified), Languages and other relevant subjects to complement the core for their future courses and developed their experimental and data analysis skills through experiments at laboratories.

By the end of the second year (4^{th}semester), the students should have been introduced to powerful tools for tackling a wide range of topics in Optics, Laser, Fiber optics, Semiconductor devices and circuits. Along with Languages, they should have been familiar with additional relevant techniques in mathematics, Chemistry or Electronics/Computer application and developed their experimental and data analysis skills through a wide range of experiments through practical at laboratories.

By the end of the third year (6^{th} semester)r, the students should have developed their understanding of core Physics by covering a range of topics in almost all areas of physics including Classical and Quantum Mechanics, Electricity and Electrodynamics, Relativity and spectroscopy, Thermal and Statistical Physics, Nuclear and Particle physics, Solid State Physics, Digital Electronics etc. along with one choice based courses, Open course and had experience of independent work such as projects; seminars etc. and thereby developing their experimental skills through a series of experiments which also illustrate major themes of the lecture courses.

B.Sc. PHYSICS

Semester-I

Core Course: I

PH1CRT01: METHODOLOGY AND PERSPECTIVES OF PHYSICS

Course outcome

After doing this course student will able to know the basic awareness of physics, need of the physics and applications of Physics

Semester-II

Core Course: II

PH2CRT02: MECHANICS AND PROPERTIES OF MATTER

Course outcome

After doing this course student will be able to know the fundamentals of understanding of applications of mechanics and properties of matter in the field of construction field.

Semester-III

Core Course: III

PH3CRT03: OPTICS, LASER AND FIBER OPTICS

Course outcome

This course aims at the knowledge and understanding of basics of light and its properties. This course is able to do the experiments in holography, laser, and fiber optics.

Semester-IV

Core Course: IV

PH4CRT04: SEMICONDUCTOR PHYSICS

Course outcome

The electronics field is emerged as widespread knowledge field and fast growing. The emergence of smartphones has given the opportunity to the people to operate it . But deep knowledge in the field of electronics requires for interested student to go further.

Semester-V

Core Course: V

PH5CRT05: ELECTRICITY AND ELECTRODYNAMICS

Course outcome

The knowledge of basic understanding of electricity give as student to know current developments in the field of generators , transformers etc,. Electrodynamics gives a students a chance to get the basic ideas and know the properties of waveguides , antenna etc. Semester-V

Core Course: VI

PH5CRT06: CLASSICAL AND QUANTUM MECHANICS

Course outcome

To provide an overview about classical mechanics and quantum mechanis and to create an awareness of real life physics.

Core Course: VII

PH5CRT07: DIGITAL ELECTRONICS AND PROGRAMMING

Course outcome

Learn about Boolean algebra,Karnaugh maps for logic design purposes. Understand the working of Flip flops,registers ,counters,analogue and digital converters. Understand the impact of digital electronics in industry.Able to apply the knowledgein doing practicals.

Core Course: VIII

PH5CRT08: ENVIRONMENTAL PHYSICS AND HUMAN RIGHTS

Course outcome

Environmental Education encourages students to research, investigate how and why things happen, and make their own decisions about complex environment issues by developing and enhancing critical and creative thinking skills. It helps to foster a new generation of informed consumers, workers, as well as policy or decision makers.

Environmental Education helps students to understand how their decisions and actions affect the environment, builds knowledge and skills necessary to address complex environmental issues, as well as ways we can take action to keep our environment healthy and sustainable for the future. It encourages character building,

and develops positive attitudes and values.

To develop the sense of awareness among the students about the environment and its various problems and to help the students in realizing the inter-relationship between man and environment and helps to protect the nature and natural resources.

To help the students in acquiring the basic knowledge about environment and the social norms that provides unity with environmental characteristics and create positive attitude about the environment.

Open Course:

PH5OPT02: Physics in Daily Life

Course outcome

The fundamentals of physics gives the basic awareness of the physics to the student studying other than B.sc Physics

Semester-VI

Core Course: IX

PH6CRT09: THERMAL AND STATISTICAL PHYSICS

Course outcome

To impart the knowledge and understanding of fundamentals of thermal physics and its connection with statistical mechanics

Semester-VI

Core Course

PH6CRT10: RELATIVITY AND SPECTROSCOPY

Course outcome

This course is aimed to get the idea of different analyzing techniques used for material characterization. Also the know the basic fundamentals of Einstein contribution in the area of physics.

Semester-VI

Core Course: XI

PH6CRT11: NUCLEAR, PARTICLE PHYSICS AND ASTROPHYSICS

Course outcome

This course aims to provide the student to build up the fundamentals of nuclear and particle physics. After undergoing this course, the student will have a knowledge about

(1) the basic properties of the nucleus and the nuclear forces. (2) Major models of the nucleus and the theory behind the nuclear decay process. Some fundamentals of astrophysics is included in order to get the idea of formation of universe

Core Course: XII

PH6CRT12: SOLID STATE PHYSICS

Course outcome

To acquire knowledge about solids and their thermal, electrical , magnetic and superconducting , semiconducting properties. To acquire knowledge about crystal structure about solids. Discuss about nonmaterial and their applications

Choice Based Course – XIV-3

PH6CBT03: COMPUTATIONAL PHYSICS

To help the students to have the basic idea about the techniques used in physics to solve problems with the help of computers. After the completion of this course students might be able to develop their own Algorithms of every method described in the syllabus and able to write the programme by their own

MSc. PHYSICS

Outcome of the program

MSc. Physics forms the final formal training of Physics and hence the program aims at providing an in depth knowledge of Physics to the student. After the successful completion of the program , a student should be capable of pursuing research in theoretical/ experimental physics or related areas. The student is expected to acquire a thorough understanding of the fundamentals of Physics so as to select an academic career in secondary or tertiary level. The program also aims at enhancing the employability of the student. Rigorous training requires phased teaching. With this intention credit and semester system is followed in this program. An M.Sc student should be capable of doing research at least in the preliminary way .To accomplish this ,research oriented project is made part of this curriculum

M.Sc. PHYSICS SYLLABUS

PH1C01: MATHEMATICAL METHODS IN PHYSICS – I

Course outcome

The objective of this course is to make students have an idea of vector, matrices and tensors, it's physical interpretation and applications.

PH1C02: CLASSICAL MECHANICS

Course outcome

After completing the course, the students will (i) understand the fundamental concepts of the Lagrangian and the Hamiltonian methods and will be able to apply them to various problems; (ii) understand the physics of small oscillations and the concepts of canonical transformations and Poisson brackets ; (iii) understand the basic ideas of central forces and rigid body dynamics; (iv) understand the Hamilton-Jacobi method and the concept of action-angle variables.

Course outcome

Electromagnetic force is one of the four forces that exist in nature with a prominent role in the daily activities of human being. So it is necessary to know the physics of this force from the basics of two inter twinned phenomena called electricity and magnetism. Hence the course aims to impart proper understanding of electricity magnetism and electrodynamics; wave nature of electromagnetic field and its properties; electromagnetic field radiating out of accelerated charges and the impact of relativity in electromagnetism along with confined propagation of electromagnetic wave.

PH1C04: ELECTRONICS

Course outcome

Electronics is the study of the flow of charge (electron) through various materials and devices such as semiconductors, resistors, inductors, capacitors, nanostructures etc. All applications of electronics involve the transmission of power and possibly information.

PH1C05: MATHEMATICALMETHODS IN PHYSICS – II

Course outcome

Introduce the concepts of Laplace and Fourier transforms. Introduce the Fourier series and it's application to solutions of partial differential equations.

PH1C06: QUANTUM MECHANICS-I

Course outcome

This course aims to develop the basic structure of quantum Mechanics. After completing the course, the student will (i) understand the fundamental concepts of the Dirac formalism (ii) understand how quantum systems evolve in time; (iii) understand the basics of the quantum theory of angular momentum. Also, this course enable the student to solve the hydrogen atom problem which is a prelude to more complicated problems in quantum mechanics.

PH1C07: THERMODYNAMIC AND STATISTICAL MECHANICS

Course outcome

To acquire the knowledge and understanding of basic principles of thermal physics and statistical mechanics. To know how the statistical mechanics is related to thermodynamics.

PH1C08: CONDENSED MATTER PHYSICS

Course outcome

To acquire knowledge about solids and their thermal, electrical , magnetic and superconducting , semiconducting properties. To acquire knowledge about crystal structure about solids. Discuss about nonmaterial and their applications. To develop in interest in doing research in solid state physics

PH1C09: QUANTUM MECHANICS-II

Course outcome

This course aims to extend the concepts developed in the course ‘ Quantum Mechanics-I . After completing this course, the student will (i) understand the different stationary state approximation methods and be able to apply them to various quantum systems; (ii) understand the basics of time-dependent perturbation theory and its application to semi-classical theory of atom-radiation interaction; (iii) understand the theory of identical particles and its application to helium; (iv) understand the idea of Born approximation and the method of partial waves. Also, this course will introduce the student to the basic concepts of relativistic quantum mechanics.

PH3C09: COMPUTATIONAL PHYSICS

Course outcome

To help the students to have the basic idea about the techniques used in physics to solve problems with the help of computers when they cannot be solved analytically with pencil and paper since the underlying physical system is very complex. After the completion of this course students might be able to develop their own Algorithms of every method described in the syllabus.

PH4C11: ATOMIC AND MOLECULAR PHYSICS

Course outcome

This course isintented to develop the basic philosophy of spectroscopy. Its aims to equip the student with the understanding of (1)atomic structure and spectra of typical one- electron and two-electron systems. (2)the theory of microwave and infra-red spectroscopies as well as the electronic spectroscopy of molecules;(3)the basics of Raman spectroscopy and the nonlinear Raman effects; (4)the spin resonance spectroscopies such as NMR and ESR. This course also introduces the student to the ideas of Mossbauer spectroscopy .

PH4C12 NUCLEAR AND PARTICLE PHYSICS

Course outcome

This course aims to provide the student to build up the fundamentals of nuclear and particle physics. After undergoing this course, the student will have a knowledge about (1) the basic properties of the nucleus and the nuclear forces. (2) Major models of the nucleus and the theory behind the nuclear decay process; (3) the physics of nuclear reactions (4)the interaction between elementary particles and the conservation.

PH3EA1:INTEGRATED ELECTRONICS AND DIGITAL SIGNAL PROCESSING

Course outcome

To study about discrete time systems and to learn about FFT algorithms. To study the design techniques for FIR and IIR digital filters.

PH3EA2: MICROELECTRONICS AND SEMICONDUCTOR DEVICES

Course outcome

The objective of the course is to expose to the students to the architecture and instruction set of basic microprocessors. This course also covers fundamentals of semiconductor devices and their processing steps in detail. The student will be able to use the knowledge of semiconductor fabrication processes to work in industry in the area of semiconductor devices.

PH4EA3: INTRUMENTATION AND COMMUNICATION ELECTRONICS

Course outcome

To understand the basic concepts of different communication systems.