

**PROGRAM OUTCOMES,
AND COURSE OUTCOMES**

2.6.1 – PROGRAM OUTCOMES, PROGRAM SPECIFIC OUTCOMES AND COURSE OUTCOMES

BACHELOR OF ARTS (B.A.)

B.A is a three year full-time undergraduate programme aimed at developing the student's soft skills and to provide exposure of students to a variety of subjects e.g. Humanities and Behavioral Science Language and Literature, Sociology, Political Science, Economics, Geography, Home science, Music and Psychology to enhance their academic, personal and professional purpose competence..

Program Highlights:

- ⊗ 3 year full time program.
- ⊗ Examination-Annual.
- ⊗ Enhancing skills for Higher PG programmes and competitive exams.
- ⊗ Eligibility 10 + 2 (on merit basis) .

The program specific outcomes and course outcomes are as follows:

PROGRAMME SPECIFIC OUTCOMES

ENGLISH LANGUAGE (FOUNDATION COURSE- II)

With the completion of course a student gains:

- ⊗ Information and training in language, culture, scientific temperament and aspects of development.
- ⊗ Communication in all situations with emphasis on figurative uses of words, idioms and phrases, culture-bound idioms and rhetorical devices.
- ⊗ Proficiency in sentence constructions, use of figures of speech etc.
- ⊗ Know-how in various types of formal and informal writing (Letter writing, paraphrasing, critical appreciation, types of essays and report writing)

COURSE OUTCOMES

COURSE NAME: ENGLISH LANGUAGE FC- II (Paper Code: 102)

B.A, B. Com, B. Sc, & B. Hsc: Part-I

B.A, B.Sc, B. Com, & B. Hsc	NAME OF THE COURSE	COURSE OUTCOMES
Part-I Paper Code: 102	Basic Language skills : Grammar and Usage	Learners are familiarized with different concepts of English Grammar and use of different parts of speech. Enables to speak, read, write and comprehend.
Part-I Paper Code: 102	Comprehension of an unseen passage.	It enhances their reading and comprehensive skills by understanding the passage in question and also helps to grasp the general language skills and issues with reference to words and usage.
Part-I Paper Code: 102	Composition : Paragraph writing	To develop communication skills in writings.
Part-I Paper Code: 102	Letter writing	To equip and train them in written correspondence to enhance their academic and professional use of language.
Part-I Paper Code: 102	Texts : Text Book: English Language & Indian Culture	Short prose pieces (fiction and Non-fiction) short poems covering a wide range of authors, subject & context enables learners to revalue literature as cultural and communicative events.

COURSE NAME:ENGLISH LANGUAGE FC- II(Paper Code: 1132)

B.A, B. Com, B. Sc, & B. Hsc:Part-II

B.A, B.Sc, B. Com, & B. Hsc	NAME OF THE COURSE	COURSE OUTCOMES
Part-II Paper Code: 1132	The Prescribed text- ' <u>Foundation English</u> ' comprises specimens of popular creative writings based on matter, technology and our Major Scientist and Institutions (Ancient and Modern)	<ul style="list-style-type: none">• The Learners develop skills to appreciate texts of various genre- e.g. Prose, Poetry and Fiction.• It helps to gain knowledge about various subjects' related to on matter, technology and our Major Scientist and Science Institutions both Ancient and Modern.
Part-II Paper Code: 1132	a) Reading comprehension of an unseen passage b) Vocabulary	<ul style="list-style-type: none">• It enhances their reading and comprehensive skills of learners.• The course will bestow the learners with LSRW language skills.
Part-II Paper Code: 1132	Report writing	Knowhow in various types of formal and informal writing, creative and critical techniques of narration and reporting any event, incident or happening.
Part-II Paper Code: 1132	Expansion of an idea	It helps to develop writing skills required for creative writing on various topics.
Part-II Paper Code: 1132	Grammar & Vocabulary based on prescribed text	<ul style="list-style-type: none">• Proficiency in sentence construction and correct use of parts of speech.

		<ul style="list-style-type: none"> • To enable students to get thorough understanding of the components of grammar and to acquire knowledge and information pertaining to language skills. • Enables students to use language correctly and effectively.
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COURSE NAME: ENGLISH LANGUAGE FC- II(Paper Code: 0232)

B.A, B. Com, B. Sc, & B. Hsc:Part-III

B.A, B.Sc, B. Com, & B. Hsc	NAME OF THE COURSE	COURSE OUTCOMES
Part-III Paper Code: 0232	This unit comprises of popular creative writing on different ‘Aspects of English language and Development’	<ul style="list-style-type: none"> • To sensitize students to the aesthetic, cultural, social and development aspects of the texts. • To enable the learners to revalue literature as cultural and communication events.
Part-III Paper Code: 0232	Essay Writing	<ul style="list-style-type: none"> • To write, compose and compile in the language. • Improves the learner’s use of language as a means of subjective expression.
Part-III Paper Code: 0232	Précis Writing	<ul style="list-style-type: none"> • To develop more effective written communication skills. • It helps in compressing & summarizing contents and narrations.

<p>Part-III</p> <p>Paper Code: 0232</p>	<p>(a) Reading comprehension of an unseen passage</p> <p>(b) Vocabulary based on text</p>	<ul style="list-style-type: none"> • It gives the training for comprehension reading and writing. • Ample opportunities to increase word power to enhance effective oral & written communication.
<p>Part-III</p> <p>Paper Code: 0232</p>	<p>Grammar Advanced Exercises</p>	<ul style="list-style-type: none"> • The students shall possess testable knowledge of various grammar concepts in accordance with syllabus. • It increases the competence in the use of English Language during both academic and non-academic situations.

(B.A, B.com, B.sc.,B.h.sc – Hindi Language- Foundation Course)

The programme enable the Students :

- To develop the social, cultural, spiritual, ethical and moral values.
- To develop the spirit to be a part of society in all ups and downs.
- To understand basic facts and concepts in Hindi Literature while the exciting aspects of Hindi Literature and Hindi Language (FC) so as to develop interest in the Study of Hindi Literature and Hindi Language (FC) as a discipline.
- To develop the ability to apply the thoughts and context of Hindi Literature and Hindi Language (FC)
- To appreciate the achievements in Hindi Literature and Hindi Language (FC) and to know the role of Hindi Lit. and FC. in society.
- To enhance the thinking capability and direction of thinking.

Hindi Language- Foundation Course (B.A, B.com, B.sc., B.H.sc)

PART – I: This course aims to analyse Hindi Grammar and translation between Hindi and English.

PART – II: this course impart an insight into the contribution of Freedom fighter and the legends .

PART – III: To enlighten student about Social , Cultural, Religious , Political, Geographical , Financial and Scientific facts .

B.A. ENGLISH LITERATURE

English is not only the International Language of the globe, but also the second language too, whatever our first language. Above that, it's most important role is as the 'Lingua Franca' of the world. Hence this course helps the students to broaden the outlook and raises the responsibility and confidence in them. Second, it makes them understand the society well and prepare them to fulfill their responsibilities and duties towards the society in a better way. Third, it improves their creative writing skills towards writing in English to enable them to contribute towards English literature. Different job opportunities like teacher, language officer, translator, interpreter and customer centered jobs are there for students of English Literature.

Programme Specific Outcomes

- ⊕ The course provides the learner with immense opportunities to plunge into the pool of Language and Literature, which ultimately makes him/her competent enough to perform well in the global arena. Study of Literature provides him/her the wisdom for the accurate expression of ideas. Literature steers him through models of umpteen life situations and makes him/her emotionally and intellectually strong and sound.
- ⊕ Performance oriented language learning bestows him with the mastery of adept language usage, coupled with remarkable interpersonal skills.
- ⊕ The student shall possess a testable knowledge on the various fields and branches of knowledge in accordance with the syllabus prescribed highlighting language and literature.
- ⊕ By the completion of the course students attain competence in the functional use of English during both academic and non-academic life situations.
- ⊕ The study of literature polishes their literary/artistic/imaginative skills and make them better thinkers and good critics and moreover responsible social beings.

- ⊖ The course will also bestow the learners with a tremendous vocabulary which will allow him/her to strike the right note while reporting an event or writing articles in a newspaper.
- ⊖ In this way the course provides with ample opportunities for the student to learn language through literature and apply that learning in different life situations.
- ⊖ Equips learners to speak correct English with right accent.
- ⊖ Prepare students to enter Masters Programmes like M.A. and other competitive exams.
- ⊖ It helps the students to get into job market e.g.: teaching, translators and language officers, public relations and customer centered jobs etc.

COURSE OUTCOMES

COURSE NAME: B.A. PART-I ENGLISH LITERATURE

PAPER-I PAPER CODE: 0105

Upon completion of the course the students will be able to:

- 1) Enables comprehensive understandings of the texts.
- 2) Analyzes literary tradition from Shakespeare to King Charles II.
- 3) Describe and discuss the themes brought up in Shakespeare's plays and poems and sonnets. Analyze the structure of his drama and work.
- 4) Analyze the background and development of drama of Elizabeth period.
- 5) Identify the literary, cultural, historical and political influences and movement in the literary world.
- 6) Analyze the major movements of writers and their works.

PAPER-II
PAPER CODE: 0106

Upon completion of the course the students will be able to:

- 1) Describe and discuss poem from Romantic age to Victoria and age.
- 2) Study of fictional works enables learners to fly on the wings of imagination and develop imaginative and creative skills.
- 3) The study of drama and the enables students to have theatrical experience of the language and in-depth knowledge of the language.
- 4) The study of fictions enables learner to get better understanding of the world around and the human values inculcated therein helps to face real life situations.
- 5) Prose study creates awareness about the application level of the language and literary works.
- 6) It informs how the social and political history of each period influences the literature and literary forms.

COURSE OUTCOMES

COURSE NAME: B.A. PART-II ENGLISH LITERATURE

PAPER-I
PAPER CODE: 175

Upon completion of the course the students will be able to:

- 1) Gain knowledge of the development of short stories and fiction from man's physical adventures to social and psychological experience.
- 2) To understand and appreciate poetry as a literary art form.
- 3) Drama and Fiction facilitate choice of an alternative career in dramatics, film making and writing.
- 4) To acquaint the students with the outline of prose of the respective age.
- 5) Define kind of poetry and types of poetry.
- 6) Identify the various types and forms of poetry.

PAPER-II
PAPER CODE: 176

Upon completion of the course the students will be able to:

- 1) Deepens knowledge in English for higher studies.
- 2) To introduce the students to Modern Age poetry, style and prose writers.
- 3) Define and introduces background of War poetry.
- 4) Deepens the knowledge of word culture through literature.
- 5) Get an exposure of eminent writers of modern age and their works and style.
- 6) Cultivates a value added life to face challenges and achieve excellence.
- 7) Specify the figurative language used in poetry.

COURSE OUTCOMES

COURSE NAME: B.A. PART-III ENGLISH LITERATURE

PAPER-I: Indian Writing in English-I
PAPER CODE: 0235

Upon completion of the course the students will be able to:

- 1) Identify the various forms and types of poetry with text.
- 2) Describe and differentiate the varieties of prose of Indian writers.
- 3) Analyze the use of myth in Indian writing in English through their exposure to Sanskrit text and modern Indian vernacular literature in translation.
- 4) Explain the elements of fiction such as narrative techniques, settings, point of view and style.
- 5) Identify the various literary forms and types.
- 6) Interpret the works of great writers of Indian writings in English.
- 7) Demonstrate through discussion and writing an understanding of significant cultural and societal issue presented in Indian English literature.

PAPER-II: American Literature (A)
PAPER CODE: 0236

Upon completion of the course the students will be able to:

- 1) Study American literary movements through poetry and verse.
- 2) Analyze American prose as an expression of individual or communal value curbswithin social, political and cultural perspectives of different periods in American literature.
- 3) Define the diverse dramatic style / forms and aesthetic ideas present in American dramas.
- 4) Drama serves as an effective means to address the complex issues of identity, nationalism, historical tradition in American context.
- 5) Illustrate characterization and its importance in fiction.
- 6) Specify the figurative language used in poems.
- 7) Develop the knowledge of literary terms.
- 8) Paves way to know the life, culture, language and society through literature.

HINDI LITERATURE

B.A. PART – I

Paper – I: To brighten the students by the glimpse of ideas and ideologist regards spirituals, religious and ethical values by the Poetries of Mahakavi- Tulsidas , Surdas, Kabirdas, Jaysee and Ghananand .

Paper – II: This part aims students to impart an insight into the social problem and solution of this running era since that time in Literatures of Premchand, Yashpal , Fnishwarnath Renu, Mohan Rakesh, Jayshankar Prasad, and Bhishma Sahni.

B.A. PART – II

Paper – I: This course aims students to generate spark about the feeling of patriotism and relating nature and human beings and the fact that loss of great initiatives at Ayurveda and naturopathy knowledge that we had earlier .

Paper – II: This course aims students to insight into social, cultural, political problems and their solutions via Literature.

B.A.PART: III

Paper – I: This course aims students to get familiarize with the “Guru ” and their ideologies regards spiritual, moral values, precious knowledge and thoughts and those were like to set on a stone and will always be .

Paper – II: History of Hindi Literature and deep analysis to the journey of enhancing Literature of Chhattisgarh.

UNDERGRADUATE PROGRAMME IN PSYCHOLOGY

B A-I

PAPER – I BASIC PSYCHOLOGICAL PROCESSES

COURSE OUTCOMES

- To get acquainted with the concept and definition of Psychology along with the different approaches and methods.
- To gain the knowledge about Biological Basis of Behaviour, Nervous System, Glands, Hormones and Emotions.
- To understand the concepts of Sensory and Perceptual Processes like Sensation, Perception and Attention.
- To develop the insight about Learning and Memory including basic ideas of conditioning and forgetting.
- To impart essential theoretical background of Cognitive and Non-Cognitive Processes, Intelligence, Motivation, Thinking Process and Personality.

PAPER – II PSYCHOPATHOLOGY

COURSE OUTCOMES

- To establish the criteria of Normality and Abnormality and Models of Psychopathology.
- To get equipped with Assessment of Psychopathology.
- To acquire the general idea of Anxiety Disorders and its various types.
- To know the facts about Mood Disorders, Personality Disorders and Obesity.
- To explore the Management of Psychopathology with special emphasis on psychotherapies.

PAPER- III PRACTICUM

COURSE OUTCOMES

Enable students to perform different experiments in lab setting and also to conduct various psychological tests on subjects in order to gain deeper understanding of psychological concepts and phenomenon.

B.A. – II

PAPER - I SOCIAL PSYCHOLOGY

COURSE OUTCOMES

- To imbibe the information about Nature, Goal and Scope of Social Psychology, Methods of Social Psychology and Approaches to the study of social behavior.
- To be familiarized with the constructs like Social Perception and Pro-social Behavior.
- To know the Nature and Determinants of Stereotypes and Prejudice, Attitudes and Interpersonal Attraction.
- To investigate various Group Structures, their Functions and leadership.
- To understand the meaning of Social Issues like Aggression, Population Explosion, Pollution; Corruption, Gender Discrimination and Child Labor.

PAPER- II PSYCHOLOGICAL ASSESSMENT

COURSE OUTCOMES

- To understand the theoretical assumptions of Psychological Assessment including Levels, Barriers and Uni-dimensional and Multidimensional Assessment.
- To develop the insight for Psychological Tests, Types and Uses.
- To inculcate the wisdom for Test Construction, Reliability, Validity and Norms.
- To pass on the awareness about Cognitive and Non-cognitive Tests.
- To identify the utility of Psychological Testing in Applied aspects of Life

PAPER- III PRACTICUM

COURSE OUTCOMES

Facilitate the students to achieve a better command over lab experiments and Psychological testing and to get acquainted with basic research steps through field work and report submission.

B A III

PAPER - I BASIC PSYCHOLOGICAL PROCESSES

COURSE OUTCOMES

- To comprehend the Meaning and application of Statistics in Psychology, nature of score, variables, frequency distribution and Graphic representation of data.
- To obtain proficiency in Measures of Central Tendency and Measures of variability.
- To learn the conception of normal probability curve and Correlation.
- To gain the knowledge of inferential statistics.
- To inspect the methods of calculating Distribution free statistics and applications of computer in psychological statistics.

PAPER - II (Optional) (A) HUMAN DEVELOPMENT

COURSE OUTCOMES

- To provide the conceptual framework of Human Development, Theories and Determinants and Approaches to study human developments.
- To make students aware of the process of Socialization, Ecological factors in Human Development and Theoretical Perspectives.
- To motivate students for internalizing concepts of Self and Identity together with Emergence of self, Development of personal identity, identity crises, Physical and sexual maturation, Sequential development of emotions.
- To enhance the reasoning by getting education about Development of morality and self concept, Development of gender differences and gender roles, Role of marriage, family and occupation in Human Development.
- To be empathetic towards Problems of Aging.

PAPER- III PRACTICUM

COURSE OUTCOMES

Provide students in-depth knowledge of testing, research, statistics and experiments through practical to ensure better performance in professional settings.

Economics

S. N.	PROGRAMME/ COURSE	PAPER	COURSE OUTCOME
1.	B.A. I Economics	Micro Eco.	<ul style="list-style-type: none">- An introduction to economics- Preliminary knowledge of micro economic theory
		Indian Economy	<ul style="list-style-type: none">- Basic understanding of Indian economy before and after independence.
2.	B.A. II Economics	Macro Eco.	<ul style="list-style-type: none">- Basic understanding about the macro eco.- To make the students able to understand and analyse the macro economic policies.
		Money, Banking & Finance	<ul style="list-style-type: none">- Building awareness about Money, Inflation, Banking policies and Govt. income and expenditure.
3.	B.A. III Economics	Economics of Growth & Devt.	<ul style="list-style-type: none">- Imparting Knowledge about growth and development.- Building awareness about environment.
		Statistical Methods	<ul style="list-style-type: none">- An introduction to the data and its analysis.- Knowledge about various statistical methods.

GEOGRAPHY

B. A. – I

Physical geography Paper - I

- . To investigate of basic facts of scientific ideas that is useful like earth movement.
- . An understanding of the layered of earth.
- . Practically allow students to explore how scientists construct understanding and explanation of things.
- . To know how physical process provides good explanation of degradation.

Human Geography Paper II.

- . To examine human societies, development and their cultures.
- . To known historical events caused people's inhabit and settle certain regions.
- . Practically know crops growing regions and development of occupation.
- . Investigation to include topography, natural resources and human civilization.

PRACTICAL

After the completion of the course, student will be able to-

1. Develop an idea about scale like Vernier.
2. Acquire knowledge of different types of map projection.
3. Gain knowledge about topographical map and apply this knowledge in ground surface.
4. Know about diagrammatic data presentation like Band graph, Climograph, Square Root, Cube Root .

B.A. - II

Paper – I ECONOMIC AND RESOURCES GEOGRAPHY

After the completion of the course, student will be able to-

1. Understand the concept of Economic activity.

2. Understand how in an increasing globalized world, economic activities occur unevenly over geographical space' how local place and global economy are intertwined and how the regime of neoliberal policies are generating uneven geography of capitalist development.

Paper – 2, GEOGRAPHY OF INDIA

After the completion of the course, student will be able to-

1. Evaluating the impacts of human activities on natural environment special reference to India.
2. They understand the economic resources of India.
3. Develop an idea about regionalisation of India.

PRACTICAL

After the completion of the course, student will be able to-

1. Develop an idea about scale like Vernier.
2. Acquire knowledge of different types of map projection.
3. Gain knowledge about topographical map and apply this knowledge in ground surface.
4. Know about diagrammatic data presentation like Band graph, Climograph, Square Root, Cube Root .

B.A. – III

Paper – I ECONOMIC AND RESOURCES GEOGRAPHY

After the completion of the course, student will be able to-

1. Understand the concept of Economic activity.
2. Understand how in an increasing globalized world, economic activities occur unevenly over geographical space' how local place and global economy are intertwined and how the regime of neoliberal policies are generating uneven geography of capitalist development.

Paper – 2, GEOGRAPHY OF INDIA

After the completion of the course, student will be able to-

1. Evaluating the impacts of human activities on natural environment special reference to India.
2. They understand the economic resources of India.
3. Develop an idea about regionalisation of India.

Paper – 3 PRACTICAL

After the completion of the course, student will be able to-

1. Develop an idea about scale like Vernier.
2. Acquire knowledge of different types of map projection.
3. Gain knowledge about topographical map and apply this knowledge in ground surface.
4. Know about diagrammatic data presentation like Band graph, Climograph, Square Root, Cube Root .

B.A. Part – I / II / III
Department Of Sanskrit
Graduate level module

The department of Sanskrit via its undergraduate program intends to preserve and disseminate various aspects of the ancient language tradition of Sanskrit language in modern perspective. The program aims at enabling future researchers with the fundamental concepts and practices of different knowledge domains like ved, vyakarana, Kavita etc. To further empower students with the tools of wisdom going beyond the pedagogical approach and to design such modules in an attempt to help them become a good citizen and spread the teachings of our heritage.

A. Play (Natak)

B.A. First year Sanskrit

1. Understanding of the play of Swapnavasavdatta
2. Igniting interest in Katha and conversational skill
3. Introducing to the PrachhyaNatakshaili

B.A. Second year Sanskrit

1. Making the students familiar with the story of NaganandamNatak
2. Familiarizing with key words, expressions and scenario of the various plays
3. Building interest to study and understand plays with minimal guidance

B.A. Third year Sanskrit

1. Informing about the nuances of the story and the intricacies working in the play of Abhigyanshakuntalam
2. Enhancing their knowledge about the various Ras like shringar, viyogetc
3. Proficiency in dramatics

Key output from the plays across 3 year-course

1. To equip the students with the knowhow of Sanskrit literature
2. To equip students with expertise in fluent verbal abilities
3. To expose students with the traditional wisdom and further popularize amongst them

B. Grammar (Vyakaran)-

(B.A. First year Sanskrit)

1. To familiarize with the principles of Laghu Siddhant Kaumudi
2. To create a detailed understanding of the rules of Sandhi, definitive principles
3. To create a flawless understanding of Bhasha gyan

(B.A. Second year Sanskrit)

1. To through light on the principles of Samas, Vakyaviniyog
2. To familiarize with the rules of Vacchya
3. To explore the concepts of general linguistics and develop skills based on Sanskrit phonology, syntax and semantics
4. To create understanding on sentence formation both pratyakshaand apratyaksha

(B.A. Third year Sanskrit)

1. To through light on the principles of kridant, tadhitaurstri affixes viaLaghu Siddhant Kaumudi
2. To disseminate knowledge of rhetoric via Kavya Prakash
3. To enables the students to learn and acquire the advance knowledge of derivational process of the Sanskrit Verbal Morphology based on the Siddhant Kaumudi

Key output of Vyakaranacross 3 year-course

1. To develop understanding of Shabdroop, Kriyaroop
2. To familiarize students with Avyaywords
3. To equip students with the process of verb formation
4. To disseminate learning of flawless Sanskrit

C. Poetry (Kavya)-

(B. A. First year Sanskrit)

1. To teachshuknasho-updeshashand familiarize with the literary style
2. To familiarize with the panchtantrakatha, Hitopdesha Katha sahitya (Mitra prapti).
The textual study of two magnum opus of Sanskrit literature is aimed to cultivate literary awareness in students towards ancient Indian literature.
3. To acquaint students with the principles of Kavya vidhan andAlankarparichay
4. The course also aims at understanding the deeper meaning of Vedic learnings.

(B. A. Second year Sanskrit)

1. To create understanding of RaghuvanshamMahakavya
2. The paper also gives an in-depth study of the simile style(upma-shaili) ofMahakavi Kalidas
3. To create fluency in Kavya vidhan- especially the nature description (prakriti chitran)
4. To familiarize with the various styles of Sanskrit prose writing.

(B. A. Third year Sanskrit)

1. Introduction and discussion on KiratarjuniyamMahakavya
2. To throw light on the expertise of MahakaviBharvi
3. To signify the importance of originalRamayanas the source texts of the subsequent literary works representing the Indian value systems, socio-cultural conditions and philosophical expressions

Key learning outcome of 3-year graduate course in Sanskrit

1. Enabling basic communication skills in Sanskrit
2. To create skilled students with detailed understanding of ancient Indian text
3. Imparting knowledge of ancient Indian thought process to students who can further appreciate and reflect on the moral values of the vedas and mahakavya
4. Introducing students to the ancient text of Sanskrit literature like ved, upnishad, smriti granthetc
5. Embarking students on a journey to explore their own heritage of cultural values
6. Creating a significant dialogue on implementation of our moral codes to the current issues hence imparting a valuable problem-solving skill
7. To teach the virtue of Sanskrit education
8. To create confidence in students towards approaching and comfortably reading Indian shastra and other works
9. To familiarize the society at whole with the methods and ways of ancient Indian teaching system
10. To create cultural, literary and historical awareness amongst the students.

B.A. Part – I / II / III

Department Of Music

B.A. First Year

Paper First

- * Knowledge of the various terms use in music.
- * Understanding song types .
- * Interpretation from the life of various artists.
- * Helping to become the best artist.
- * Knowledge of various raagas.

Paper second

- * Knowledge of North Indian and south indian system.
- * Knowledge of notation.
- * Knowledge of rhythm process.
- * Knowledge North and South Indian rhythm process
- * Determination of procedure to be followed the production of raaga

B.A. Second year

Paper First

- * knowledge of the various terms use in music.
 - * Inspiration from the life of various artists.
 - * Knowledge of rhythm process.
 - * Knowledge of rhythm process.
- Knowledge of North Indian and south indian rhythm process.
- * Understanding the types of composers.
 - * Understanding the types of instruments

Paper second

- * Knowledge of sound appropriate for music.
- * Knowledge of types of sound.
- * Knowledge of 'that' and 'mail' methods.
- * Knowledge of songs genres of different states.
- * Learning raga details.

B.A. Final Year

Paper First

- * Knowledge of the various terms used in music.
- * Knowledge of ancient carpeet voice setting method.
- * Knowledge of Indian and western octaves.
- * Knowledge of gharana system.
- * Wonderful use of rhythm.

Paper Second

- * Learning raga details
- * Learning the writing of notation.
- * Understanding musical history
- * Understanding the classical music and doing vocal work.

Program outcome

- * Make a good artist and good listener
- * Make sense for raaga music.
- * Development of mental strength.
- * Removing stage fear.
- * Knowledge of moral education.

DEPARTMENT OF SOCIOLOGY

B.A. SOCIOLOGY:-

Statement of Programme Specific Outcomes (B.A) (SPOs):-

By the end of this programme, the students will be able to:

1. Understand the various sociological concepts and basic theories
2. Understand the ideas inculcated in western and Indian sociological thoughts
3. Understand the praxis of sociological thoughts
4. Understand the social problems of Indian society with relation to its structure and culture.

Statement of Course Outcomes (COs)

Course Outcomes: By the end of this course, the students will be able to:

B.A PART – 1

Paper I: Sociology: An Introduction

1. Understand the meaning of sociology and its relationship with other social sciences
2. Understand the basic concepts in sociology
3. Understand the meaning, process and agencies of socialization
4. Understand the meaning, functions, dysfunction of social structures.

Paper II: Indian Society

1. Understand the ashram ,karma, dharma, and other classical view of the society
2. Understand the structure and composition of Indian society
3. Understand the basic structure in Indian society
4. Understand the familial and social problems

B.A PART – 2

Paper I: Sociology of tribal society

1. Students will be able to describe the concepts of tribe and indigenous as well as relate it with particular historical context.
2. The will be able to engage with the everyday ways of life of tribes and the changes associated with it.

3. The students will be able to examine various social, cultural, economic and political processes in different context and related to specific community.
4. They will be able to develop a critical outlook towards state policies and its applications and consequences.

Paper II: Crime and society

1. Learners will be able to acquire knowledge regarding crime, its changing profile and various theoretical perspectives on crime.
2. Learners will develop a sociological understanding towards crime and criminal justice in our society
3. Learners will become sensitized to the causes, social dimensions, consequences and measures to control various forms of crime.

B.A PART – 3

Paper I: Sociology of tribal society

1. Students will be able to describe the concepts of tribe and indigenous as well as relate it with particular historical context.
2. The will be able to engage with the everyday ways of life of tribes and the changes associated with it.
3. The students will be able to examine various social, cultural, economical and political processes in different context and related to specific community.
4. They will be able to develop a critical outlook towards state policies and its applications and consequences.

Paper II: Social research methods

1. To understand the principles of sociological research.
2. To appreciate the ethical issues involved in undertaking social research.
3. To acquire skills in the use of both quantitative and qualitative techniques of research.
4. To judge what methods and techniques are appropriate to particular research problems.
5. To develop their critical abilities to appraise published research findings in their own substantive areas of study.

B.A (HOME SCIENCE) PROGRAMME

On completion of the specific programme B.A (Home Science) following are the outcomes expected from students:

- Home Science improve the quality of life.
- As a discipline Home Science integrates the ingredients of the science , social science to facilitate the study and enhance the quality of human life.
- The education process in Home science underscores the importance of the individual's dynamic relationship with her family , community & society as a whole , as well as with the resources in the environment.
- Higher education learning in home science provides students the oppurtunity to sharpen their capacities with a sense of social responsibilities.
- Home scientists promote capacity building of individuals & communities for social & economic empowerment. They train community women & youth from various strata of society for entrepreneurship . They donot remain job seekers but have also become job creators.
- The study of Home Science provides the homemaker with the knowledge & skills required to manage a home effectively.
- Helps in the best utilization of resources to get maximum satisfaction & returns.

B.A (Home Science)

SNO	SUBJECT (PAPER)	COURSE OUTCOMES
1	Anatomy Physiology & Hygiene BA Part-I Paper - I	<ul style="list-style-type: none">• Gain the basic knowledge of Human Anatomy & Physiology.• Obtain an insight into the structure & functions of Cells , Tissues & Organs ,systems of human body.• Demonstrate good personal hygiene & safe food handling procedures; describes food storage and refrigeration techniques; explain sanitation, cleaning material , garbage , & refusal.• Discuss Occupational safety & health & hygiene programs.• A study of food safety, hygiene sanitary practices in industries.
2	Home Science- Extention Education BA Part-I Paper - II	<ul style="list-style-type: none">• Enhance people's capacity for social functioning towards better quality of life.• Relate the social work concepts & knowledge with individuals, groups & society.• Acquire knowledge to develop entrepreneurial skills , National & International agencies & their collaboration.• Capacitated to become participating & contributing citizens.• Enhance the students in the selection & use of Audio Visual aids , media in different socio-cultural environment.

		<ul style="list-style-type: none"> Acquire knowledge on the extension models and approaches, role of home scientist in community development, family planning programs, community problems & curriculum planning.
3	Fiber & Textile Science BA Part-II Paper - I	<ul style="list-style-type: none"> Introduce basics of dyeing, printing & finishing. Acquaint students with importance of finishing of textiles. Develop the skills in doing dyeing & printing of textile. Describes the use & significance of tools & equipments for apparel construction. Explain drafting & pattern making method.
4	Family Resource Management BA Part-II Paper - II	<ul style="list-style-type: none"> Understanding on the concepts related to family resource management. Identify & manage the use of resources available for functional use. Setting realistic goals & being practical & prudent in the use & management of limited resources by making intelligent decisions. Becoming money, time & energy conscious in daily living. Provide situation to understand significance of family income & expenditure and saving for future.
5	Human Development BA Part-III Paper - I	<ul style="list-style-type: none"> Describe the characteristics, needs & developmental task of infancy, childhood, adolescence. Identify the biological & environmental factors affecting during growth & development. Analyze key issues that influence child adolescent development. Relate the principles of human development with self, family & society. Manage life crisis at every stage of life span.
6	Food & Nutrition Science BA Part-III Paper - II	<ul style="list-style-type: none"> Summarize & critically discuss & understand both fundamental & applied aspects of food & nutrients. Able to explain functions of specific nutrients in maintaining health. Obtain knowledge of different food groups, their composition & nutrients present in the foods. Identifying nutrient specific force & apply principles from the various factors of foods & related disciplines to solve practical as well as real world problems. Understand the vital link between foods, nutrients & health. Gain knowledge on functions, requirements & effects of deficiency of nutrients.

B.A. (H.Sc.) PRACTICAL OUTCOMES

S.NO	NAME OF THE PRACTICAL	PRACTICAL OUTCOMES
1	ANATOMY PHYSIOLOGY & HYGIENE B.A. First year	The student develops the understanding of the personal and social health and hygiene, first aids, therapeutic diets, and various communicable and non communicable diseases.
2	FIBER AND TEXTILE B.A. Second year	Students will able to learn cutting and stitching of garments, various stain removal techniques and flower decoration methods.
3	FOOD & NUTRITION SCIENCE B.A. Third year	Learn to therapeutic and normal diet planning cooking and presentation.

POLITICAL SCIENCE

B.A.Part-I Political Science

Paper First - Political Theory

1. Student will clear with Meaning of Political science in modern concept. Explaining the power, Authority and Influence. Method of study Political Science.
2. Explanation of the state and its essential elements. Various theories origin of the state.
3. Explanation of the sovereignty and its pluralistic criticism.
4. Discussing the kinds of Government unitary and Federal, Parliamentary and presidential and Dictatorship. To Explain work of Executive, Legislature and Judiciary.
5. Critically evaluating party system pressure Groups, Social change Theories.

2. Paper Second – Indian Government and Politics

1. Analysing the Indian National movement, Gandhi an movements such as the Noncooperation. Civil Disobedience, Quit India movements.
2. Introducing the Indian constitution characteristics, Preamble, sources.
3. Critically analyzing Union Executive : President, Prime minister, Council of Ministers; Union Legislature Lok Sabha and Rajya Sabha .
4. Explanation of the Union Judiciary
5. To: Explain the state Legislature : Legislative Assembly and Legislative council, Election , commission. Major Issue of Indian Politics.

B.A. SECOND YEAR POLITICAL SCIENCE

1. WESTERN POLITICAL THINKERS- PAPER 1ST

1. Covers The Political Thought Of Plato And Aristotle.
2. Delineates The Secular Political Thought Of Niccolo Machiavelli.
3. Social Contract Theories Of Thomas Hobbes And John Locke.
4. Enlightenment Political Thought As Reflected In The Works Of JJ Rousseau And JS Mill.
5. Understanding Basic Concept Of Liberty, Equality, Rights Law And Justice.
6. Analysing The Theory Of Class And Class Struggle.
7. Describing The Marxist Approach To Politics.

2. COMPARATIVE GOVERNMENT AND POLITICS- PAPER 2ND

1. Tracing The Evolution Of Comparative Politics As A Discipline And Drawing Distinction Between Comparative Politics And Comparative Government.
2. Investigating The Nature And Scope Of Comparative Politics.
3. Analysing The Approaches The Approaches And Models Of Comparison: System Analysis; Structural Functionalism; And Institutional Approach.
4. Critically Analyzing The Features Of A Liberal Democratic And Socialist Political System With Focus On **UK, USA** And The People's Republic Of **China**.
5. Discussing The Features Of A Federal System With Special Reference To **USA**.
6. Conducting an Intensive Comparative Study Of The Executive (**UK, USA**) Legislature (**UK, USA And The PRC**) The Judiciary(**UK, USA And PRC**).
7. Critically Looking At The Right Of The Citizens Of **UK, USA** And **PRC** From a Comparative Perspective.

B.A.Part-III Political Science

1. Paper First – International Politics

1. Student will clear with meaning, Nature and scope of International Politics. Explanation the Approaches to study the International Politics.
2. Explanation the Theories of International politics.
Student will clear with Definition of Power, Elements and Different forms of Power.
3. Critically evaluating the concept of Balance of power theoretical Advantage, collective security.
4. Student will clear Definition, Types and Functions aims and means of Diplomacy.
Explanation the Disarmament.
5. Impact of environmentalism, Globalization, Human Rights.

2. Paper Second – Public Administration

1. Explaining the nature scope and evolution of public Administration as a Discipline, Differences and similarities Between public and Private Administration.
2. To Discuss the methods of study and approaches of public Administration, tracing the challenges of New public Administration.
3. Analyzing the Administrative Processes : Leadership, decision making, communication, accountability.
4. To explain the Bureaucracy and Budget making process, The New trends in public Administration .
5. Explanation the legislative control over Administration, Judicial control over administration.

B.A./B.COM/B.SC./B.HSC./ - I / II / III
ENVIRONMENT STUDY

Through this course the students will be able to understand the following points-

1. Importance of environment conservation-
the preservation of environment is important for bio-diversity and the living beings.
2. Resource conservation-
how resource conservation is essential for the survival of human life like water, metals, soil etc.
3. Water as a key element of human life-
spreading awareness through the slogans like “*Jal hai to kalhain*”. How it is important to maintain water levels which will further help in food conservation and water cycle in the environment
4. Population explosion-
To educate people in general about the finite resources and the importance of creating a balance between resources and population so that population explosion could be avoided in future.
5. Human study-
human study is significant as to understand which sort of challenges does humans face in general for example- child rights, women rights etc.
6. Sanctuary-
how the creation and preservation of sanctuary helps wildlife – flora and fauna to survive and sustain
7. Environment pollution and the steps to curb it

Key course outcomes

- To appreciate the natural biodiversity and to encourage its preservation
- To amplify wise usage of the natural resources
- To protect and save the wildlife and not destroy their habitat via deforestation
- To encourage education and to promote it so that population explosion could be kept on check
- To spread awareness on human rights and to further the causes of the vulnerable groups
- To raise awareness on pollution and to inform students on how to avoid environment pollution

SCIENCE

DEPARTMENT OF CHEMISTRY

B. Sc. Chemistry

Programme outcomes

- This programme for undergraduates include the main areas of chemistry that is organic , inorganic and physical chemistry
- This course helps to develop scientific temperament of students.
- After completing this course students will be able join in various fields including M.Sc. and other higher studies can also opt for big MNCs.
- The purpose of the programme is to provide the key knowledge base and laboratory resources of chemistry to students.
- The main aim of this programme is to make students understand the role of chemistry in our society and to make them able explore further in this field.

BSc-1st year (CHEMISTRY)

PAPER I , Inorganic chemistry

Course outcome

- To impart the students a thorough knowledge of Bohr's theory, its limitation and atomic spectrum of hydrogen atom, Aufbau and Pauli exclusion principles, Hund's Multiplicity rule, electronic configuration of the elements.
- To understand the general characteristics of periodic table and applications in predicting and explaining the chemical behavior like as atomic and ionic radii, ionization enthalpy, electron gain enthalpy, electronegativity, effective nuclear charge, shielding or screening effect, Slater rules,
- To impart the students thorough idea in Ionic bond: Ionic Solids - Ionic structures, radius ratio & co-ordination number, limitation of radius ratio rule, lattice defects, semiconductors, lattice energy Born- Haber cycle, polarising power & polarisability of ions, Fajans rule, Ionic character in covalent compounds.
- To provide an insight into the characteristics of different types of Covalent bond: Lewis structure, Valence bond theory and its limitations, Valence shell electron pair repulsion theory (VSEPR) and Molecular orbital theory.

- The students will understand some fundamental aspects hydrides, solvation & complexation tendencies including their function in biosystems and introduction to alkyl & aryls, Derivatives of alkali and alkaline earth metals
- To get a deep insight into Boranes, borazines, fullerenes, grapheme and silicates, interhalogens and pseudohalogens.
- To enable the students to get a clear idea about the chemical properties of the noble gases, chemistry of xenon, structure, bonding in xenon compound
- To be familiarise the students with basic principles involved in the analysis of cations and anions and solubility products, common ion effect.

PAPER: II , Organic chemistry

Course outcome

- To understand the basic concepts such as Inductive, electromeric, resonance and mesomeric effects, hyperconjugation and their applications and Introduction to types of organic reactions: Addition, Elimination and Substitution reactions.
- To know stereochemistry and various possible conformations of organic compounds and how it play important role of reaction.
- To get an idea about the conformational structure of cyclohexane and relative stability of mono-substituted cycloalkanes and disubstituted cyclohexane.
- To know the different types of Carbon-Carbon bond formation reactions in organic chemistry and reactivity and selectivity of halogenations reaction.
- To understand the role of various reactions of alkenes: Electrophilic additions and mechanisms (Markownikoff/Anti-Markownikoff addition), mechanism of oxymercuration-demercuration, hydroboration-oxidation, ozonolysis.
- To understand the role of various reaction Electrophilic aromatic substitution: halogenation, nitration, sulphonation and Friedel-Craft's alkylation/acylation with their mechanism
- To get insight into the chemistry of aromaticity: Hückel's rule.

PAPER – III , Physical Chemistry

Course outcome

- To gain the knowledge to apply important and basic mathematical concepts in chemistry.
- To learn the different postulates and derivation of the kinetic gas equation, molecular velocities and molecular basis of heat capacities.
- To understand the behaviour of real gases: Deviations from ideal gas behavior van der Waals equation.
- To get an idea about the Intermolecular forces, magnitude of intermolecular force, structure of liquids, properties of liquids, viscosity and surface tension.
- To understand the basic concepts physical adsorption, chemisorption, adsorption isotherms and electrical properties of colloids.
- To get an overview about the structure and properties of solid crystals and symmetry elements and symmetry operations,
- To know the characterisation of crystals using X-ray diffraction, Bragg's law and powder pattern method.
- To learn the different type of order and molecularity of reactions and methods of determining order of reaction and concept of transition state theory.
- To have an idea about the important aspects of catalyst, catalysed reactions and industrial applications of catalysis

PAPER-IV , Laboratory Course

Course outcome

- Enable the students to semi-micro qualitative analysis of given inorganic mixtures.
- To acquire the skill to acid-base titrations, redox titrations and iodo / iodimetric Titrations
- To gain the skill to purification of organic compounds by crystallization using different solvents
- Enable the students to determination of the melting points of organic compounds.
- To know about qualitative analysis of organic compounds with detection of elements and functional groups
- Enable the students to surface tension measurements and chemical kinetics.

B. Sc. – 2nd year CHEMISTRY

Paper- 1 (Inorganic Chemistry)

Course outcome

- To understand basic facts and concepts of periodic table and their periodicity for transition elements.
- To understand the general characteristics of transition elements such as atomic and ionic radii , variable oxidation state, formation of coloured ion , magnetic moment and catalytic behavior.
- To develop the critical study of comparative treatment of 4d and 5d elements.
- To gain skill to apply calculation of oxidation state , magnetic moment and electronic configuration.
- To understand the old and modern concepts of oxidation and reduction.
- To get an idea electrochemical series and its application .
- To study the principles involved in extraction of the elements .
- To understand the werners theory and its experimental verification.
- To gain skill to apply IUPAC nomenclature of co-ordination compounds .
- To know the basic concept isomerism in co-ordination compounds , stereochemistry of complexes with 4& 6 co-ordination numbers and chelates compounds.
- To understand the Valence bond theory and back bonding of co-ordination compounds.
- To know the basic concepts of crystal field theory and their application.
- To gain skill to apply factors affecting of the CFSE of Octahedral and Tetrahedral complexes .
- To understand the electronic configuration structure , oxidation state and ionic radii.
- To know the basic concepts of lanthanides and actinides contraction and their affects .
- To study the complex formation , occurrence and isolation of lanthanide and actinide compounds .

- To understand basic facts of acids and bases concepts in general life.
- To study the various concepts of acids and bases theory such as Arrhenius concept, Bronsted and Lowry concepts, Conjugate Acids and Bases, Lux-Flood Concept, Solvent system concept and Lewis concept.
- To study the types of solvents and their general characteristics such as Liquid ammonia, Liquid sulphur dioxide and liquid hydrogen fluoride and ionic solvents.

Paper- 2 (Organic Chemistry)

Course outcome

- To understand the chemistry of alkyl and aryl halide, their properties and energy profile diagram.
- To study of the nucleophilic substitution and elimination reaction in alkyl halide.
- To know the basic concept of Aromatic haloderivatives, their properties, nucleophilic aromatic substitution reaction.
- To understand the monohydric alcohols, dihydric alcohols and trihydric alcohols and their properties.
- To study of the formation methods of alcohols and their important chemical reaction.
- To know the basic concepts of phenols and their derivatives.
- To gain skill to apply the different reagent react with phenols of various named reaction.
- To study of aldehyde and ketones, their structure, reactivity, methods of preparation.
- To get the basic facts of their reaction, acidic hydrogen of carbonyl compounds and oxidation and reduction in carbonyls.
- To understand the facts of carboxylic acids, effect of structure on acid strength and their properties.
- To gain the study of derivatives of carboxylic acids and their structure and interconversion of acid derivative.
- To understand the aliphatic and aromatic nitro compounds, preparation methods, properties and mechanism their reaction.

- To study of amines and the separation methods of primary , secondary , tertiary amine salt mixture.
- To gain skill to apply the relative strength of bases and effect of the structure on basicity.

Paper- 3 (Physical Chemistry)

Course outcome

- To understands the basic facts of thermodynamics , types of system , state of system , operations , state function and path function.
- To study of many types of thermodynamics law and their applications and limitations .
- To gain skill to apply on many thermodynamic reactions and their applications .
- To study of the second law of thermodynamics , carnot cycle & theorm , Entropy , thermodynamic equation and relation, free energy and work function ,entropy change during phase transformation.
- To understands the criteria of thermodynamic equilibrium , concept of fugacity ,coupling of exothermic and endothermic reactions , equilibrium constant and Le-Chatelier's principle.
- To study of the ionic equilibria ionization of weak acids and bases , pH-scale, common ion effect, salt hydrolysis , buffer solution , solubility and solubility products.
- To understands the phase rule and explain the different type of system , derivation of Gibbs phase rule , Henry's law , Nernst's distribution law and solvent extraction
- To gain skill to apply the one component system, two component system, and tree component system.
- To understands the characteristics of electromagnetic radiations , interaction of radiation with matter , laws of photo chemistry .
- To study of the quantum yield, experimental determination of quantum yield ,actinometry , photochemical equilibria.
- To get the basic facts of Jablonski diagram and explain the various processes .

PAPER-IV , LABORATORY COURSE

Course outcome

- To understand the Qualitative semimicro analysis of given inorganic mixture.
- To gain skill to apply to the understanding of chemistry of different reactions.
- To get basic facts of different volumetric analysis .
- To understand the detection of element (X, N,S).
- To gain the study of qualitative analysis of unknown organic compounds containing simple functional groups.
- To study of the preparation of Organic compounds .
- To get the basic facts of transition temperature , Thermochemistry , Phase Equilibrium and molecular weight determination .

B.Sc. 3rd year

Paper-I , Inorganic Chemistry

Course Outcome

- To develop the understanding of Metal-Ligand bonding, stability and reactions of transition metal complexes.
- To impart knowledge of magnetic properties and electronic spectra of transition metal complexes.
- To understand the preparation, properties, bonding and applications of alkyls and aryls of Li, Al, Hg, Sn and Ti.
- To make students understand the various functioning of various biological compounds with special reference to haemoglobin and myoglobin.
- To make students understand the concept of hard and soft acids and bases.

Paper-I , Organic Chemistry

Course Outcome

- To impart knowledge of preparation, properties, structure and reactions of Grignard reagent, organolithium and organosulphur compounds.

- To develop the understanding of various organic synthesis occurring through enolates.
- To make students understand about various monosaccharides, oligosaccharides and polysaccharides.
- To make students understand about the protein structure and nucleic acids.
- To impart the knowledge of various types of polymers with their preparation .
- To impart the knowledge of various types of Dyes.
- To develop the understanding of principle and applications of mass , infrared and UV-Visible spectroscopy.
- To develop the understanding of principle and applications of NMR spectroscopy.

Paper-III , Physical Chemistry

Course outcome

- To make students understand about the operators, Eigen function and Eigen operators.
- To develop the understanding of schrodinger equation and its application to various systems.
- To develop the understanding of principles and applications of vibrational, Rotational and Raman spectra.
- To impart the knowledge of various photochemical phenomenon.
- To make students understand various concepts of thermodynamics .

Paper-IV , Laboratory Course

Course Outcome

- To enable students to prepare various organic and inorganic compounds,
- To develop the skill of identifying compounds by their physical and chemical nature.
- To make students able to handle UV-Visible spectrophotometer.

DEPARTMENT OF BOTANY

B.sc. I	Paper – 1. Virus, Bacteria, Fungi, Lichen and Algae	The course aims at made the students understand the diversity among virus, bacteria, fungi, lichen and algae. The course is designed to familiarize the students with microbes and least developed plant groups. The students would know the economic importance and harmful effects of virus, bacteria fungi, lichen and algae.
	Paper – 2. Bryophyta, Pteridophyta, Gymnosperm and Paleobotany	The students would develop understanding about the diversity, identification, classification and economic importance of lower plants and seedless plants. Students were able to know the paleobotany, types of fossils, its role in global economy and geological time scale, also understood the various fossil genera representing different fossil groups.
B.Sc. II	Paper – 1. Plant Taxonomy, Economic Botany, Plant Anatomy and Embryology	The course was an introduction to the methodology and principles of plant systematic and patterns and origin of seed plant diversity. Lectures and practicals provide needed to recognize and characterize several plant families and higher taxa that are important elements of ecosystem. The students are made to understand the key methods and principles of biological classification and nomenclature. Apart from this, students also got an idea about the major patterns and processes in evolution of seed plants. This course also helped the students to explore the intimate relationship between plants and our lives. Topics covered under this course include our use of plants as medicines, food, beverages and textiles.
	Paper – 2. Ecology and Plant Physiology	The students are made aware about structural adaptations in plants growing in different environments and also taught about the ecosystem so as to bring awareness on different aspects of biodiversity and conservation of biodiversity. This course also deals with various processes of plants like photosynthesis, respiration, translocation, absorption and nitrogen metabolism. The students also got insight into the various types of plants movements.

B.Sc. III	Paper – 1. Plant Physiology, Biochemistry and Biotechnology	This course deals with various processes of plants like photosynthesis, respiration, translocation, absorption and nitrogen metabolism. The students also got insight into the various types of plants movements. The students are made to understand the basic concepts and plant tissue culture wherein, they understood the reasons behind different plant transformation techniques and also got the brief insight into the DNA technology and gene cloning.
	Paper – 2. Ecology and Utilization of Plants	The students are made aware about structural adaptations in plants growing in different environments and also taught about the ecosystem so as to bring awareness on different aspects of biodiversity and conservation of biodiversity. This course also helped the students to explore the intimate relationship between plants and our lives. Topics covered under this course include our use of plants as medicines, food, beverages and textiles.

DEPARTMENT OF ZOOLOGY

Part-1, Paper-1,

Cell biology and non chordate

Course outcome

The students will understand importance of cell and cell organelles in organism. To know the utility of cell division in life. To gain the knowledge of Cancer. To make the aware of immune system of Human. To develop interest among students in invertebrate animals of different phylum.

Zoology, Part -1, Paper-2,

Chordate and Embryology

Course outcome

To study the scientific classification of chordate groups .To study the various organ system of chordates through type study .To provide an in depth understanding On the structure Function , Behaviour, Adaptation, and Evolutionary aspects. To give an understanding On the basic and Fundamental knowledge. Theories, and Principles of Embryology. To study the embryonic developmental process and stages of Higher chordates. To make the students observe the diversity in chordates and their systematic position.

Zoology, Part-2,Paper-1

Anatomy And Physiology

Course outcome

To Study and compare the anatomy of various systems of vertebrate. To learn the physiological and anatomical peculiarities of vertebrates. To provide an understanding on the basic knowledge, theories, mechanisms, process and principles of animal physiology. To give an overview of the comparative anatomy and functioning of various organ systems in vertebrates series. This course will provide the students with a deep knowledge in anatomy and physiology of animal.

Zoology,Part-2,Paper-2

Vertebrate Endocrinology, Reproductive Biology Behaviour, Evolution And Applied Zoology

Course outcome

To understand role of Hormones in Human. The course will provide students with deep knowledge in physiology of reproduction with special reference to human. To acquire knowledge about the organic evolution. The students will get a basic knowledge of animal behaviour. To get an idea about culture of animals.

Zoology,Part-3,Paper-1

Ecology Environmental Biology, Toxicology, Microbiology and Medical Zoology

Course outcome

To provide an understanding on the basic knowledge of theories and principal of ecology. To study the toxicants and their impacts on human health and environment. To provide a broad on understanding on applied aspects microbiology. To make them aware of the pathogens, health related problems and treatment. To provide a basic knowledge on environment and influence of man on environment.

Zoology,Part-3,Paper-2

Genetics, cell Physiology, Biochemistry, Biotechnology and Bio techniques

Course outcome

This course will provide students with basic knowledge in genetic and human genetic disorders. To understand the role of pH value and enzyme in animal. To in enable the students to get a idea about the structure and function of biomolecules. To get an idea about principles and application of biotechnology. To introduce the tools and technique in biology.

DEPARTMENT OF MATHEMATICS

Programme Name: B. Sc. Mathematics

Programme Outcomes

- π Understanding of the fundamental axioms and theorems in mathematics and capability of developing ideas based on them.
- π Inculcate mathematical reasoning.
- π Prepare and motivate students for higher studies in mathematics and related fields.
- π Provide knowledge of a wide range of mathematical techniques and application of mathematical methods/tools in other Environmental, Engineering, Humanities, and Scientific domains.
- π Provide basic knowledge on topics in pure mathematics and empowering the students to pursue higher degrees at reputed academic institutions.
- π Good understanding of number theory which can be used in modern cryptographic technologies.
- π Nurture problem solving skills, thinking, creativity through assignments, regular tests and seminars.
- π Assist students in preparing (personal guidance, books) for competitive exams.

Course Outcomes

B. Sc. I year

Paper –I Algebra & Trigonometry

Algebra: This course aims to provide a first approach to the subject of Algebra, which is one of the basic pillars of modern mathematics.

1. The Course on Algebra deals with advance topics on matrices, rank, eigen values.
2. It deals with homogeneous and non-homogeneous system, solutions of cubic and bi-quadratic equations.
3. Students learn to analyze and solve a linear system of equations.
4. Important characteristics of matrices such as its four fundamentals subspaces, rank, determinant, eigen values and eigen vectors, different factorizations etc. to find the inverse of a matrix by Cayley-Hamilton theorem.

5. Important concepts of vector spaces such as independence, basis, dimensions, orthogonally etc.
6. The focus of the course will be the study of certain structures called groups, rings, fields and some related structures.

Trigonometry: Trigonometry is important for surveying and navigation and describing the phenomena that are periodic in nature.

1. Students will learn about the De Moivre's Theorem and its applications
2. Students will learn how to Derive Gregory series and Summation of series
3. Students will learn about the real and imaginary parts of a circular and hyperbolic functions of a complex variable

Paper- II Calculus

Calculus: The study of calculus is normally aimed at giving students the "mathematical sophistication" to relate to such more advanced work. After completing this course the learner should be able to

1. Deal with some important concept of limit, continuity, differentiability of functions. .
2. Find the higher order derivative of the product of two functions. .
3. Expand a function using Taylor's and Maclaurin's series. .
4. Conceive the concept of asymptotes and obtain their equations. .
5. Learn about partial derivatives and its applications. .
6. Learn the area under a given curve, length of an arc of a curve when the equations are given in parametric and polar form. .
7. Definite Integrals and Transcendental Functions.
8. Learn the area and volume by applying the techniques of double and triple integrals
9. Deal with tracing of curves, reduction formulae, rectification, quadrature and volume of solids of revolution.
10. Use graphical and numerical evidence to estimate limits, and to identify situations where limits fail to exist..

11. Learn about first-and second order differential equations.
12. Learn Rules for powers (including exponent +1) and exponentials, the six trigonometric functions and the inverse sine, tangent and secant.
13. Use integration to find the area under curves and the area between curves.

Paper-III Vector Calculus & Geometry

Vector Calculus: After completing this course the learner should be able to ·

1. Represent vectors analytically and geometrically, and compute dot and cross products of two, three and four vectors .
2. Analyze vector functions to find derivatives, tangent lines, integrals, arc length, and curvature, · Compute limits and derivatives of functions of 2 and 3 variables, ·
3. Apply derivative concepts to find tangent lines to level curves and to solve optimization problems, ·
4. Evaluate double and triple integrals for area and volume, ·
5. Differentiate vector fields · Determine gradient vector fields and find potential functions ·
6. Analyse the fundamental theorem of calculus and see their relation to the fundamental theorems of calculus in calculus,
7. leading to the more generalized version of Green's, Gauss, and Stokes' theorem.

Geometry :

1. Geometry is important for the students to knowledge about the concepts of lines, points, shapes, size, relative position of figures, and properties of space.
2. To make students understand about the equation plan using two point forms, three point form
3. Locus of point that is equidistant to two given points
4. Students learn that how to determine equation of Sphere, Cone, Cylinder straight line, co-axial limiting point of sphere etc.

B. Sc. II year

Paper- I Advanced Calculus: Advanced Calculus is of outmost importance because of its huge applicability. Calculus is not restricted to mathematics and analysis, it is used pretty much everywhere - Physics, Chemistry, Economics, Biology, Engineering, Dynamic systems and so much more.

1. To have full knowledge of calculus involving the fundamental tools such as continuity and differentiability of two variables.
2. To understand the maximum and minimum behavior of a function of two variables.
3. To understand different indeterminate form of limit.
- 4 This course aims to introduce the notion of differentiation and integration in general, and sets, functions (and their graphs), limits and continuity of functions in particular.
5. Techniques of derivatives and integration and solving various examples to grasp the idea of each technique are the main objective this course aims to deliver.
6. Calculate the limit of a function at a point numerically and algebraically using appropriate techniques including L'Hospital' rule.
7. Find points of discontinuity for functions and classify them.
8. Understand the consequences of the intermediate value theorem for continuous functions.

Paper- II Differential Equations

1. To make them learn Power series method to solve differential equation
2. Solve Ordinary partial differential equation
3. Select the appropriate method for any particular problem
4. Assess the reliability of the partial differential technique Ordinary differential equations
5. Ordinary differential equations have important applications and are a powerful tool in the study of many problems in natural science and in technology.
6. They are extensively employed in mechanics, astronomy, physics & in many problems of Chemistry and Biology.
7. Most important applications are in theory of oscillations & in automatic control theory.

Paper – III Mechanics:

In mechanics students study statics & dynamics and learn about Newton's Law of motion, Projectiles, Work Power and Energy. Students also learn about simple harmonic motion null lines, equilibrium of coplanar forces acting on rigid body, moments and parallel forces.

1. The primary purpose of the study is to develop the capacity to predict the effect of force & motion while carrying out the creative design function of science.
2. This capacity requires more than a mere knowledge of physical & mathematical principles of mechanics.
3. One of primary objectives in a mechanics course is to help the student develop the ability to visualize which is so vital to problem formulation maximum progress is made when the principles & their limitations are learned together with in the context of us application.
4. . Newton's Law of Mechanics makes it possible to reduce the description of motion of mass points or solid bodies to solve ordinary differential equations.

B. Sc. III year

Paper- I Analysis: Real analysis is an area of analysis that studies concepts such as sequences and their limits, continuity, differentiation, integration and sequence of functions, focuses on the real numbers, often including positive and negative infinity to form the extended real line.

1. Students will be able to work with variety of functions.
2. Students will easily understand the relationship between the derivative and the integral.
3. Enhance the knowledge of partial derivative.
4. Student will learn how to work with the polynomial functions. Students get the knowledge to determine analyticity of a function.
5. Subsets of a metric space, open, closed, connected, bounded, totally bounded and compact sets.
6. Function on a metric space, discontinuous, continuous, or uniformly continuous functions

7. Students will be able to understand about the events which can be independent, exhaustive & exclusive.
8. They will learn the difference between discrete and continuous random variables.
9. They will also get rough idea about an occurrence and outcomes.
10. To understand how to solve the questions with the help of expectations and moments generating functions.

Paper- II Abstract Algebra-

Abstract Algebra: A major objective is to introduce students to the language and precision of modern abstract algebra. This means that the course will be proof-based, in the sense that students will be expected to understand, construct, and write proofs.

1. The focus of the course will be the study of certain structures called groups, rings, fields and some related structures.
2. Abstract algebra gives to student a good mathematical maturity and enables to build mathematical thinking and skill.
3. To educate about Ring, Field, Ideals, Modules etc and its applications
4. Learn about Vector Space, Rational Canonical form , Norms etc.
5. Studies of Polynomial Rings and applies polynomials to the construction and analysis of error- correcting and error-detecting codes.

Paper-III Discrete Mathematics : Discrete mathematics is very useful branch of mathematics in computer Science, digital computing, Data programming, and data communication in modern cosmos.

1. Simplify and evaluate basic statements including compound statements, implications, inverses, converses and contra positives using truth tables and properties of logic
2. Apply the operations of sets and venn diagrams to solve applied problems using the principle of inclusion-exclusion
3. Evaluate Boolean functions and simplify expression using the properties of Boolean algebra, apply Boolean algebra to circuits and gating networks

4. To impart the basic principles of Boolean algebra, logic, set theory Permutations & Combinations and graph Theory. Be able to understand logical arguments and logical constructs
5. The course will extend students logical and mathematical maturity and ability to deal with abstraction and introduce most of the basic terminologies used in computer science and applications.
6. Determine the domain and range of a discrete or non-discrete function, graph functions, identify one-to-one functions, perform the composition of functions, find graph the inverse of a function, and apply the properties of functions to application problems.

DEPARTMENT OF PHYSICS

B.Sc. Physics

Program Outcomes:

1. Understand the core concept of Physics subjects
2. Acquire analytical and logical skill for higher Education.
3. Excel in Experimental and Theoretical Physics.
4. Trained to take up jobs in allied fields.
5. Confident to take up competitive exams.

Course outcomes

B.Sc. Part I

Paper I: Mechanics, oscillations and properties of matters

Mechanics: This course provides the basic concepts related to the motion of all the objects around us in our daily life and builds a foundation of various applied field in science and technology. The course covers the study of vectors, laws of motion, momentum, energy, rotational motion, gravitation, fluids, elasticity and special relativity.

Oscillations and rigid body motion: This course comprises the fundamentals of harmonic oscillator model, including damped and forced oscillators and grasps the significance of terms like quality factor and damping coefficient.

Superposition of harmonic motions: After study this theory students wonder that our eardrums vibrate under a complex combination of harmonic vibrations and the resultant effect is given by the principle of superposition.

Motion of charged particles in electronic and magnetic fields: Recognize the motion of the charged particle in electromagnetic field.

Properties of matters: This course comprises the basics of properties of matter, i.e., how Young's modulus and rigidity modulus are defined and how they are evaluated for different shapes of practical relevance.

Paper II: electricity, magnetism and electromagnetic theory

Mathematical background: The knowledge of mathematical physics would be valuable, to understand the essential mathematical methods for solving the advanced problems in physics and to develop the ability to apply the mathematical concepts and techniques to solve the problems in theoretical and experimental physics.

Electrostatics:By studying the electrostatics students emphasizes its applications in the **real** world. One of its applications is in printers and photocopiers where static electric charges attract the ink, or toner, to the paper. Other uses include paint sprayers, air filters, and dust removal.

Dielectrics, steady and alternating currents:The study of dielectric properties concerns storage and dissipation of electric and magnetic energy in materials. They are important for explaining various phenomena in electronics, optics, solid-state physics, and cell biophysics.

Magnetostatics:Magnetostatics is the study of static magnetic fields.It is a good approximation even when the currents are not static as long as the currents do not alternate rapidly.

Time varying fields and electromagnetic waves:This *studymake* us capable to understand that the electric and the magnetic *fields* induce each other and such laws will complete the system of Maxwell equations. The most dramatic consequence of this mutual induction will be the existence and propagation of the *electromagnetic waves*.

Practical:Basic experiments related to mechanics would perform by the students to get familiar with various measuring instruments and would learn the importance of accuracy of measurements.

B.Sc. Part II

Paper I: thermodynamics, kinetic theory and statistical physics

The laws of thermodynamics: Become familiar with various thermodynamic process and work done in each of these process and have a clear understanding about Reversible and irreversible process and also working of a Carnot engine, and knowledge of calculating change in entropy for various process.

Thermodynamic relationships:Thermodynamic relationship is needed to relate the changes in the fundamental and derived properties in terms of the measured properties that are directly accessible from laboratory measurements.

Kinematics of gases:These studies are important for clarifying the capture process of particles by the diffusion mechanism. According to this theory, gas is composed of a large number of small-sized molecules compared with the distances between them.

The statistical basis of thermodynamics: The course makes the students able to understand the basic physics of heat and temperature and their relation with energy, work, radiation and matter. The students also learn how laws of thermodynamics are used in a heat engine to transform heat into work. The course contains the study of laws of

thermodynamics, thermodynamic description of systems, thermodynamic potentials, kinetic theory of gases, theory of radiation and statistical mechanics.

Statistics: This includes the study of Basic postulates, application of classical distribution to ideal gases, imperfect gases, quantum statistics and black body radiation. This course helps the students to understand the dynamics of the bulk material in macroscopic as well as microscopic levels and the relation between microscopic and macroscopic systems.

Paper II: waves, acoustics and optics

Waves in media: This course includes the study of superposition of harmonic oscillations, wave's motion, oscillators, sound, wave optics, interference, diffraction, polarization.

Optical instruments: Optical instruments are the devices which process light wave to enhance an image for a more clear view.

Interference of light: Calculate wavelength difference and fringe width from the interference pattern.

Diffraction gratings: A grating disperses light of different wavelengths to give, for any wavelength, a narrow fringe. This allows precise spectroscopy.

Laser system: In This course the students would gain the knowledge basic principles and their applications in science and technology.

Practical: Students would gain practical knowledge by performing various experiments of Optics and Radiation.

B.Sc. Part III

Paper I: Relativity, Quantum mechanics, atomic, molecular and nuclear physics

Relativity: Grasped the fundamentals of different types of frames of references and transformation laws; both the Galilean and the Lorentz transformation.

Quantum theory and quantum mechanics: Students would learn basic postulates and formulations of quantum Mechanics. This area of physics plays an important role in explaining the behavior of all physical systems in the universe. The course includes the study of a brief review of foundations of quantum mechanics, matrix formulation of quantum mechanics, symmetry in quantum mechanics and approximation methods for bound states.

Atomic and molecular spectra: This includes atomic and molecular spectroscopy. As per the course structure, basics concepts of spectroscopic principles, rules and techniques in spectroscopy to know about their applications, will learn by the students.

Nuclear physics: In this course students would know about the general properties of nuclei, nuclear forces and detectors, radioactive decay and nuclear reactions. The course magnifies the knowledge of students in prospect of various applications of nuclear physics.

Paper II: solid state physics, solid state devices and electronics

Crystal structure: this will help the students to develop an understanding of the lattice, different types of crystal structures, symmetries. Using X-ray diffraction in crystals, the student would gain understanding about the interior of the substances.

Band structure and motion of electrons: The course includes the study of defects in crystals, magnetism, energy bands and dielectric and electrical properties of insulators. And this course has vast importance for those students, who seek R & D opportunities in the field of theoretical condensed matter physics, material science, device fabrication, nanoscience and nanotechnology etc.

Semiconductor devices: This comprises of basic understanding of power amplifiers, feedback amplifiers, operational amplifiers and optoelectronic devices. These are helpful for the students to find opportunities, in research and developments.

Computational physics: To provide an opportunity to the students, to learn about the fundamentals of computer applications in solving the problems in different branches of Physics and Mathematics, basics of C-programming is included in this course, which can be useful in their future career in the field of research and technology.

Practical: In This Course students would gain the practical knowledge by performing various experiments related to different fields in physics, especially electronics.

DEPARTMENT OF MICRO BIOLOGY

B.Sc. Part – I

Micro Biology Programme

*Under graduate microbiology programme course offered by department of microbiology, government Kamal Devi college Rajnandgaon Follows the syllabus proscribed by Hemchand Yadav university Durg the course is combination of general and specific education.

*The aim of this course is to handle basic instrument and microbe used in microbiology lab ,various basic techniques to isolate characterize the microbes.

Course outcomes of B.Sc. microbiology programme.

B.Sc. part 1st paper 1st

General microbiology and techniques

1:Name of course :-fundamental history and development of Microbiology.

Course outcomes :-to understand to students fundamental history concept and scope of microbiology and different major group of microorganisms and to develop interest among in various branch of microbiology.

*This course also teaches about the development of Microbiology and it's pioneer works. Given by scientists

Student learn about the beneficial and harmful microbes, Special properties of microorganism.

2: name of course :- Basic microbial techniques and studying the microbes.

Course outcomes : -To impact the basic knowledge on microbial techniques to handle microbes and basic instrumentation use in microbiology lab.

*To make the students capable of basic different in microbes by simple and differential staining

*To develop interest among students how to use and Handel various instrument use in microbiology lab. *This course include the information about the basic techniques which is use for the isolation ,identification, media preparation, obtain pure culture and their maintenance .

3: nameof course : -virology and bacteriology.

Course outcomes :-To impart the basic knowledge of viruses and bacteria their structural and functional organization ,reproduction life cycle and economic importance.

4 : name of course : -mycology.

Course outcomes :- To impart the basic knowledge about the fungi :their structure and function and role of fungi in ecosystem ,and also to improve the self identify by staining method.

5: name of course : -Phycology and protozoology.

Course outcomes : -To understand the specific class of algae and protozoa and development the analysis skills by identification method by the microbial techniques.

Paper second :-Biochemistry and physiology.

6 name of course : -Carbohydrates and protein .

Course outcomes : -To impart the basic knowledge on the structure and function of carbohydrates and protein

The learning activity for this section include the following :-

*Reading : structure and function of carbohydrates and proteins

*Self check : carbohydrates, protein.

*To emphasize :The central role of CHO and proteins.

*To learn : about the deficiency diseases cause by its and their remedies.

*self analysis : To analyze the different types of carbohydrates by testing method.

7: name of course : -Lipids and Nucleic acids.

This course teaches about the basic information about lipid and nucleic acids structure ,chemical nature Synthesis, and their types and role of macromolecule in living bodies.

*To teaches that the vital dietary component lipid are the basis of higher energy components .

*This topic include the information about functional and synthesis of lipid , Lipid are storing energy, signaling and structural components of the cell.

Out comes : Nucleic acids

*Discuss nucleic acids and the role they play in DNA and RNA. DNA is the set of instructions for our cell. Our DNA determine who and what we are.

*Describe the basic structure of nucleic acids.

*compare the contrast the structure of DNA and RNA.

Learning activity :-

Reading :the history of DNA and replication major enzymes involved in replication
Prof reading DNA telomeres

Self check :-DNA base pairs and replication.

8: name of course :-Enzyme.

Course outcomes :- This topic teaches about the basic structure and general properties of enzymes.

*To impart the knowledge to students about the enzyme kinetics.

*To give students thorough knowledge of different theory of enzymes action .

*This topics included the information about the mechanism of allosteric enzymes, co enzymes, isozyme, inhibitors and extracellular enzymes.

Student will be able to :-

1 Explain why enzymes are the good catalyst .

2 Described how enzyme recognized their substrate.

3 Describe how enzymes increase reaction rate

4 Identify and explain the different classes of enzymes.

9: name of course :-Microbial metabolism.

Course outcomes :-To understand the basic knowledge of metabolism in living cell.

To impart the knowledge about catabolism, and anabolism

To develop the analysis skills how energy release and utilized in metabolic reaction .

To understand to students that the metabolic process is totally enzymes based reaction.

The topic also include the information about bacterial photosynthesis ,chemosynthesis and biosynthesis of alpha, beta oxidation of fatty acids. And urea cycle.

10: name of course :-Growth physiology and transport system.

*To understand to students the physiology of bacterial growth, growth condition phase of growth indifferent atmospheric condition : psychrophilic, mesophilic, thermophilic, hyperthermophilic.

* This topic also include the information about the methodology of transport system.

*To understand to students the process of osmosis and diffusion in cell system.

Practice course outcomes

Name of course :-1 basic information about instrument. 2 preparation of culture media. 3 single colony isolation .4 serial dilution. 5 simple and differential staining. 6 bacterial growth measurement by O D. 7 qualitative test for amino acid ,CHO ,lipid ,protein estimation and blood glucose test. 8 assay of activity of amylase and phosphatase .

Course outcomes : -To understand proper handling of microbiology instruments and to equip the students with the knowledge of instruments .

To impart the students broad out line of the methodology of culture media preparation and single colony isolation on solid and liquid media.

To develop interest among students preparation of serial dilution and staining process for identification of different microbial strain

To develop and improved the analysis skills for qualitative estimation of carbohydrates ,amino acids, and lipid

To learn about the knowledge of estimation of protein and blood glucose, and analyze the amount of amino acids and blood glucose present in our bodies .

To develop the self analysis skills among students.

B.Sc. Part – II

Microbiology programme specific out comes

- 1. Name of course : -fundamental of Molecular biology**
- 2. Course outcomes :** -Molecular biology basically deals with the study of DNA and other biomolecule essential for substance of life and varied mechanism involved at molecular level.

*Upon successful completion of the course student are expected to be able to :-

1:-understand the structure, properties and function of gene in living organism at the molecular level and knowledge about DNA as genetic material ,enzymology and replication strategies molecular mechanism.

2: -name of course : -central dogma of protein synthesis.

Out comes :-Upon successful completion of the molecular biology undergraduate curriculum students will be able to explain the basic molecular process in prokaryotic and eukaryotic protein synthesis central dogma of molecular biology is an explanation of the flow of genetic information with in biological system it is often started as DNA makes RNA and RNA makes protein

**The course teaches the students about transcription and translation process of protein synthesis.

**students are expected to be able understand the functions of enzymes RNA Polymers involved in protein synthesis the course teaches the students ,inhibitors is used as treatment of disease by inhibiting the protein synthesis process.

**To described the importance of genetics code Wobble hypothesis.

3 name of course : - Mutation and DNA repairs.

Course outcomes : -Upon successful completion of the course student are expected to be able to Understand : -The mutation direction of mutation, and how to cause

mutation ,various mutagen That cause mutation in living body.detectthechanges occur in body.

**To impart the students a broad out line of the methodology of Repairs and damage of DNA

* *To understand the how to damage caused mutation in living body.

4name of course :- Gene regulation.

Course outcomes :- To understand the to students that the gene regulation is a process by which the cell control the activity of gene products ,some gene are controlled by multiple levels.

*Enable the students to understand the most regulated levels of gene expression is transcription and also understand that the basic unit of gene recon ,mutton cistron.

5 Name of course : - Genetic engineering.

Course outcomes : - This course is also known as Modification or manipulation techniques, this course teaches about recombinant DNA technology techniques and their application in field of G. E.

**IN this course include the information about manipulation of an organism genome using biotechnology it is a set of technology used to changing the genetic makeup of cell.

**This course outcomes to understand to students new DNA is obtained by either isolation or copying the genetic material of gene of interest ,and to teach about artificial synthesis of gene by using restriction enzymes and plasmid vector.

**This course also include the information and activity about ligase and terminal transfease

This course learn about the use of Genetic engineering in field of pharmaceutical, industrial, agriculture and research aria.

Paper 2ndBioinstrumentations and biostatic .

6 name of course : -microscopy and centrifugation.

Course outcomes : -Learning outcomes of this topic is that students will be equipped with the knowledge to handle basic instrumentation use in microbiology Lab, centrifuge is used to isolate macro/biomolecule like protein RNA, DNA .

** learn to students about microscopy use for identification of various types of microbes present in the form of culture. Like phase contrast is used for the identification of transparent and color less specimen,

**To identify and understand the principle of light microscope and which object is to identify by this technique .

**Student to understand the refraction of electromagnetic radiation or electron beams interacting with specimen which create an image in the case of electron and optical microscope.

7 Name of course : -PhMetory and chromatography.

Course outcomes :-Upon successfully completion of the course student are expected to be able to :

**Understand the students functions of Ph meter Is used to measure the phvalue of different biochemical molecules like Protein , DNA , RNA etc .

**To teach to students about chromatography is used for the separation of biomolecules like amino acid mixtures and chlorophyll.

8 name of course : -spectrophotometer, colorimeter,turbidometer

Course outcomes : -students will be equipped with the knowledge to handle instrument spectrophotometer measure or determined the amount of known chemical substance (concentration) measure by the intensity of light (amountof photon) absorbed after it passed through sample solution.

**to teach about the functions of turbidometer by measuring the the loss of intensity of transmitted light due to the scattering effect of practical suspended in it

**The students to be able to understand the use of colorimeter how to used for measuring the liquid color samples the device measure the intensity of concentration of the color solution.

9 name of course : -Electrophoresis techniques .

Course outcomes : -This topic include the information about the instruments Electrophoresis their design and function ,this topic teaches how to separate the macromolecule found in living cell.

Different type of electrophoresis like paper ,gel,immuno are use for the separation of boi molecules according to their nature or requirements.

10 name of course :- Biostatistics

Course outcomes : -The course include the information about statistics ,recognize the definition of statistics and it's relation with the other science.

*Restate the principle concept about biostatistics.

*collect data relating to variable which will be examined and calculate descriptive statistics from these data.

*Apply hypothesis testing via samples of the statistical distribution.

*Arrange the result of the hypothesis testing and make a statistical decision.

*formulate and perform a descriptive and informational analysis of a public health or other health, science study using statistical software, reshape data for analysis using a program or statistic language. And also be capable of self directed learning of unfamiliar statistical method and written and oral presentation of results /finding.

Practical Course outcomes : -

1: - Genetic marker :-this experiment learn about Identify individual or Species to teach that the marker is a gene of DNA sequence with a known location on

chromosome .linker inherited diseases with responsible gene is used to track the inheritance of a near by gene

2: -Growth phase :-to understand the growth phase of different microbial strain lag log stationary and Death phase on various condition.

3: -Bacterial DNA isolation :To learn about purification of genetic DNA from bacterial culture provide that basis for downstream molecular analysis this process is achieved by using electrophoresis.

4: -Plasmid as vector : -This practical learn the information about the plasmid DNA use as a vector in recombinant DNA

5:-Electrophoresis :-This practical is used for the isolation of bacterial DNA and plasmid DNA Protein, and RNA

6: -Bacteria and fungi isolation from air and soil :-This practical learn how the microbes are isolated from air and soil, using culture media techniques.

7: -study of rhizosphere and phylosphere: -this experiment teach about the isolation of rhizospheric and phylospheric organism which is beneficial for plant. Act as growth activator .

8: -Biodegradation: -This experiment learn about the degradation of organic waste by microbes this experiment is important for the atmospheric balance.

9: -Assessments of potable water : -the experiment learn to help the diagnose the potability of water or check the quality of water drinking water or not.

10:-Analysis of sewage and garbage waste : -This experiment learn about the Analysis of sewage and garbage waste is used for agriculture field.

B.Sc. Part – III

Microbiology (Under Graduation Course)

Undergraduate microbiology course offered by department of microbiology, kamla devi college Rajnandgaon follows the syllabus proscribed by Hemchand Yadav university Durg. The course is combination of general and specific education .

Course outcomes of B.Sc. 3rd year Microbiology

1 Name of course : -History of molecular biology and Genetic engineering.

Course outcomes : -This course contains the information about molecular biology and genetic engineering, molecular biology is a field which mainly deals with the study of molecular mechanism.

Molecular biology basically deals with the study of and other biomolecules essential for substance of life and varied mechanism involved at molecular level.

The students will be able to : -

- *To know that concept of molecular biology.
- *Elucidate the molecular techniques involved in gene transfer mechanism.
- * To explain DNA replication strategies and enzymes involved in replication.
- *To understand the functions, structure, properties of gene in living organism at the molecular level and knowledge about DNA as genetic material, enzymology and replication strategies.
- *This course described the experimental evidence about DNA as a genetic material.

2 :name of course : - Gene Mutation .

Course outcomes : -This course includes the information about Gene mutation occur in the gene loci of the cell due to the exposure of mutagen on cell, which alter the phenotypic character of the cell

***This topic includes the information about mutagen, which change the phenotypic character of cell : -**

1 :-small change occur in phenotype .

2: -Big change occur in phenotype .

3 :-No change occur in phenotype

*Enable the students to understand the harmful and beneficial mutation occur in gene

*To learn about mutation to control gene can have major effect.

*To learn students about harmful mutation may cause genetic disorder or cancer.

***The students to be able to know : -**

- 1- substitution mutation.**
- 2- Deletion mutation.**
- 3- Insertion mutation.**
- 4- Inversion mutation.**
- 5- Reciprocal mutation.**
- 6- Missense mutation**
- 7- Nonsense mutation**
- 8- Silent mutation**
- 9- Frame shift mutation .**

3 name of course : -functions of macromolecule.

Course outcomes : -This topic introduce to students the major functions of macromolecule, nucleic acid, protein, carbohydrates.

To the students to be able to know : -

1:-Early observation on the mechanism of heredity, DNA as a genetic material.

2: -basic mechanism DNA replication strategies.

3: -Replication enzymology.

4:-Enzymology of transcription and translation process of protein synthesis .

The course also include the information about genetic code, to understand the students that the code having different type of properties.: -

1 :-code is triplet.

2,,: -code is degenerate.

3: -code is non over lapping.

4: -code is comma less.

5: -codeis non ambiguous .

6: -code is universal.

Code is co-linearity.

To learn about how to regulate The expression of gene by the presence and absence of inducer and repressor.

4 : -name of course : -DNA repairs and restriction system.

Course outcomes : -This topic include the information about DNA repairs damage restrictions modification systems, type of restrictions enzymes, methylation, and biology of plasmid, , bacteriophage and their life cycle.

To teach the students about the basic mechanism of damage and repair system of cellular DNA. and the functions of photolyase and ligase which is directly part in the process of damage and repair.

To learn the damage occur due to the effect of mutagen.

This course teaches the basic knowledge about the restrictions enzymes type of restrictions enzymes and their use.

1: -construction of restrictions enzymes map.

2 :-Construction of DNA finger prints.

3 :- recombinant DNA technology.

To understand to students biology of plasmid and lytic lysogenic cycle of bacteriophage.

5: -name of course : -Plasmid and phase vector.

Course outcomes : -The topic give the information about vector, plasmid and phase vector respectively.

*Accordingly this topic students learn about function, and use of vector, how the vector carries piece of foreign DNA, to transfer to host cell.

*To develop the analytical skills among the students ,self isolate to vector by Electrophoresis techniques .

*the topic gives the knowledge about restrictions and ligation of vector and passenger DNA. Enzymes restrictions endonuclease and ligase help in recombinant DNA technology .

*The students able to understand analysis of recombinant clone by the use of culture media colony analyzed by antibiotics selection method, colony hybridization method, blue white selection method.

*The students learn about the recombinant DNA technology has also proven important to production of vaccines and proteins therapy.

*students learn about the isolation of protein by method via: dialysis method, chromatography method, electrophoresis method, according to this method protein can be separated by either their charged, or molecular weight.

Paper second : - program specific outcomes

Environmental and medical microbiology

1 Name of course :- Aerobiology.

Course outcomes : -The student in the course learn about the definition of aerobiology.

*The students will be able to case study the air born diseases caused by bacteria, Virus, fungi symptoms and their preventive measures.

*This topic include the information about the droplet nuclei, aerosol present in air, and assessment of air quality.

2. Name of course : -soil microbiology.

Course outcomes : -The aim of this course to impart the knowledge in soil microflora, physical and chemical character of soil, rhizospheric and phyllospheric microorganism.

*The students learn about the microbial interaction symbiosis :

1. Mutualism
2. Commensalism.
3. synergism.
4. Parasitism.
5. Ammensalism.

6. Predation.

7. Antagonism.

*At the end of this course the students learn about the information biofertilizer microbes help in the production of fertilizer .

3.name of course :-Aquatic microbiology.

Course outcomes : -Through this course the students learn about the microbes which help in balancing of ecosystem.

*Student in this course will learn about fresh water ecosystem water zonation ,upwelling, eutrophication , and analyze the assessment of water quality .

*And the end of this course student will be able to learn about the water born diseases.

4 .name of course : -Food microbiology and industrial microbiology.

Course outcomes : -Students in this course will learn about microbes in food, spoilage of food and preservation techniques of food .

*Through this course they learn about degradation of xenobiotic compound, bioaccumulation biopesticide, and deterioration of vegetable.

*At the end of this course the students will learn about the concept of industrial microbiology and its application ,with the help of industrial microbiology produce variety of product like paneer ,jam ,jelly ,alcoholic and non alcoholic drinks etc.

5.Name of course : -Waste treatment.

Course outcomes : - This topic include the knowledge about waste treatment,student learn the type of waste liquid and solid waste, liquid waste are treated with different method and solid also to be.

*Through this course the students will be able to understand the liquid waste is treated, by aerobic anaerobic primary , secondary ,and tertiary also.

*The end of this course the students will be able to learn about the useful by product, mushroom cultivation, fuel fertilization and biodegradation of industrial waste .

Microorganisms help the production of fertilizer, and fuel, like Rhizobium, VAM, Azolla, help in the production of fertilizer. microbes also help the degradation of industrial waste.

Practical course outcomes

1.Characterization of geneticmarker.

Course outcomes : - The aim of this practical is to identify change in chromosome gene or protein to diagnose the genetic disease.

2.Isolation of bacterial DNA.

Course outcomes : -The aim of this practical is bacterial DNA Isolate by using electrophoresis isolatedDNA is used in recombinant DNA technology.

3.Isolation of plasmid DNA .

Course outcomes : -This practical is performed to isolate plasmid DNA from bacterial cell ,the students able to understand the plasmid DNA is used in process of transfection, sequencing, screening of clones restriction digestioncloning and PCR.

4. Name of course : -Electrophoresis of protein /DNA.

Course outcomes : -The practical is performed to isolate the protein and DNA separation with the help of gel electrophoresisstudents learn how to separate the macromolecule .protein are forced to move through the pores of gelatinous medium by applying an electric current separated across the gel based on size electric charged.

5. Name of course : -Microorganism isolation from air, water, soil.

Course outcomes : -This practical is performed to isolate bacteria, fungi ,which are present abundantly in different sources like water air and soil .the isolated microbes having to type of properties :beneficial and harmful

6: -Isolation of pathogenic microorganism.

Course outcomes : -This practical is performed for the isolation of pathogenic microorganism which caused diseases in plants,humans, animals after isolation antibiotic sensitivity test is again perform for their remedies.

7.Study of rhizospheric and phylospheric.

Course outcomes : -This practical give the information about the rhizospheric and phylosphericmicrobesfrom economic important plant .rhizospheric Microbes induced the growth of plant root by the production of chemical indole acetic acid .

8.Biodegradaton of organic compounds.

Course outcomes : The practical is performed for the degradation of organic compounds with the help of microbes. Specially bac and fungi.

To learn the balancing of ecosystem.

9.name ofcourse :- Microbial assessments of water quality.

Course outcomes : - The practical is performed for the quality test of portable water.

10. Name of course : - Analysis of sewage waste.

Course outcomes : -This Practical develop the analysis skills among students,student learn how to treat the sold and liquid waste ,after treatment the solid waste is use as fertilizer and liquid again use as drinking water.

11.Isolation of aquatic fungi by baiting technique.

Course outcomes : -This practical perform to isolate the aquatic fungi by baiting technique liquid hyphae selected for quickly attaching bacteria of which serve where able to use Fungal componentas the any source of energy.

*Student learn the paraffinolytic activityof aquatic fungi.

*This practical is performed among students to learn about the aquatic fungi, the role of this fungi is that :act as a decomposer,symbiont, parasite and the play an important role in regulation of ecosystem.

12. Name of course : -Demonstration of bacterial antagonism.

Course outcomes : -Student learn about antagonism, this is important predators of multiple negative outcomes that suppreseseor interfere with the normal growth and activity of plant pathogen

The antagonism organism is use to treatment of plant disease.

13. Name of course : -Microscopic observation of root colonizing fungi VAM.

Course outcomes : - This practical is help to observed the morphological character of fungi VAM with the help of microscope,

The experiment develop analysis skills among students.

COMMERCE

DEPARTMENT OF COMMERCE

Name of PROGRAMME : B.Com

The Bachelor of Commerce program prepares the students for a Career in Accounting ,Banking, Finance, Insurance and Management sectors.

PROGRAMME OUTCOMES

The College is affiliated to the Hem Chand Yadav University , Durg . Thus, the college follows the guidelines and syllabus prescribed by the Affiliated University.

Programme Outcomes

- ⊞ Enables Students to get theoretical and practical knowledge in the Commerce sector which includes Accounts, Commerce, Marketing, finance , Management, Taxation, Business Law, Auditing , Economics, Environment etc.they can apply their knowledge to solve their financial problems.
- ⊞ Develops communication skills and corporate leadership to face the challenges of the corporate world.
- ⊞ Develops entrepreneurial skills amongst Students . They can apply their knowledge to start a new business unit or startup , Formulation of LLP or Company as employment option.
- ⊞ Develop various managerial and accounting skills for professional opportunities. Enhances the capability of decision making at personal and professional levels.
- ⊞ Thus, after completing their graduation Students develop a thorough understanding of the fundamentals in Commerce and Finance.
- ⊞ This program could provide well trained professionals. After completing graduation, students can get skills regarding various aspects like Manager Marketing Manager, Sales Manager, Accountant Management Accountant, cost Accountant, over all Administration abilities of the Company.

Program Specific Outcome

- 1) Students venture into Managerial positions, Accounting areas, Banking Sectors, Auditor, tax consultant , Company Secretary, Teacher, Professor, Stock Agents, Government employments and so on.
- 2) Students will prove themselves in different professional exams like C.A. C S, CMA, MPSC, UPSC. As well as other coerces.

- 3) The students will acquire the knowledge, skill in different areas of communication, decision making, innovations and problem solving in day to day business activities.
- 4) Students will gain thorough systematic and subject skills within various disciplines of finance, auditing and taxation, accounting, management, communication.
- 5) Students can also get the practical skills to work as accountant, audit assistant, tax consultant , As well as other financial supporting services.
- 6) Enables students to demonstrate Progressive learning of various tax issues and tax forms related to individuals and businessmen and setting up their own business start up.
- 7) Students will learn relevant Advanced accounting career skills, applying both quantitative and qualitative knowledge to their future careers in business.
- 8) Students will be able to do their higher education . further move towards research in the field of Commerce.

Course Outcomes

B.Com First Year

Financial Accounting:

- 1) Imparts conceptual knowledge of various accounting concepts, conventions and policies.
- 2) It enables to impart basic accounting principles , Accounting standards and Special Accounting areas of Financial Accounting applicable to Business World.
- 3) Introduces the students to working knowledge of Accounting Standards issued by the ICAI.
- 4) To encourage the students Identifies financial transactions and to record these systematically in the books of Accounts for further reference.
- 5) Understands the techniques of Depreciation Accounting,
- 6) Inculcates the techniques, methods and practice of preparing final accounts and Accounting of Non- Trading Institutions.
- 7) Acquaints learners with knowledge regarding accounting procedures related Hire purchase and Installment payment system accounting.
- 8) Enables understanding of financial situation and results of operations of that organization .

- 9) The student will get thorough knowledge on the accounting practice prevailing in partnership firms and other allied aspects.

Business Communication

- 1) To make the students aware about the business communication.
- 2) To understand the process and importance of communication.
- 3) To develop awareness regarding new trends in business communication ,various media of communication and communication devices.
- 4) Provides exposure to business writing,preparation of reports and presentation.
- 5) It develops effective business communication skills among the students and also enables them to understand basic management process and principles.
- 6) Corporate communication helps future managers and employees in performing managerial functions smoothly.
- 7) Imparts the techniques of group discussion, the guidelines of preparing for the interview along with the knowledge of drafting different formats of letters like inquiry, sales, marketing, claim, adjustments, appointment and termination.
- 8) Provides basic knowledge of Verbal Skills. Develops effective oral skills so as to enable students to speak confidently interpersonally as well as in large groups.

Business Mathematics

- 1) Introduces mathematics to undergraduate students of commerce so that they can use them in the field of commerce & industries to solve the real life problems.
- 2) To use and understand useful functions in business as well as the concept of EMI.
- 3) To learn the applications of matrices in business.
- 4) Introduces linear programming, graphical reading, statistical application of investment based on business application.
- 5) It enables the students to solve LPP to maximize the profit and to minimize the cost.
- 6) It enables the students to calculate simple and compound Interest.

Business Regulatory Frame work –

- 1) This paper acquaints the students with information regarding the rules, laws and regulatory bodies that frame the business regulations in India
- 2) It Provides knowledge about Indian laws related to business organizations. Provides a brief idea about the frame work of Indian business law.
- 3) Familiarizes the students with case law studies related to business law.
- 4) Provides basic knowledge regarding creation of contract.
- 5) Provides the knowledge regarding negotiable instruments and remedies in case of dishonor of instruments.
- 6) Acquaints students with laws related to Indian Contract Act., Sale of Goods Act, Consumer Protection Act, Indian Partnership Act, which will help the students to have complete legal knowledge of Business.

Business Environment

- 1) To make the students aware about the Business and Business Environment.
- 2) To develop entrepreneurial awareness among students.
- 3) They can understand the problem of sustainability and environmental imbalance caused by wrong practices of trade and business organizations and also apply professional ethics and responsibilities of corporate towards the human society and country.
- 4) It provides knowledge about current and rising Issues in trade and Business world related to national and international level and also provide knowledge of changing policy after globalization .
- 5) Creates awareness among students about various economic conditions of macro - economics such as inflation, unemployment etc.
- 6) They can understand the financial , monetary and fiscal policies at national and international level .
- 7) Creates an understanding of the nature of International Trade and the nature of International organization such as the United Nations, the International Bank for Reconstruction and Development (World Bank), International Monetary Fund, World Trade Organization and their effects on business.

Business Economics

- 1) To provide students knowledge of Micro Economic concepts and inculcate an analytical approach to the subject matter.
- 2) It enables to understand basic economic knowledge and principles of economics applicable in the business world.
- 3) Enables complete grasp over the General Principles of Economics, Profit Principles, Pricing Practices and Demand and supply.
- 4) To arouse the students interest by showing the relevance and use of various economic theories.
- 5) Enables understanding of the relationship between different market structures and how they compare and contrast with one another.
- 6) Enables understanding of how a firm sets price for its products by using different methods.
- 7) Familiarizes the students with the basic concepts of micro and macro economics and its application to business.

B.com 2 Year
Corporate Accounting

- 1) Helps students in gaining practical knowledge of accountancy.
- 2) Helps students in preparing Final Accounts in vertical form.
- 3) Imparts conceptual knowledge of various accounting concepts, conventions and policies.
- 4) Inculcates knowledge about accounting methods, practices and techniques particularly pertaining to joint stock companies.
- 5) Provides knowledge about the Issue, forfeiture ,re-issue and buyback of shares their accounting treatment.
- 6) Provides knowledge about the procedure and Provision of Redemption of Preference Shares and Debentures.
- 7) To make aware the students about the valuation of shares.

Corporate Law:-

- 1) It Provides knowledge about laws related to business organizations.
- 2) To impart basic knowledge of the provisions of the Companies Act 2013 and the Depositories Act, 1996. Case studies involving issues in corporate laws are required to be discussed.
- 3) Develop knowledge of students to prepare company account cost account according to company act 2013.
- 4) Creates understanding of various standards, maintaining order, solving disputes and other rights.

Cost Account :-

- 1) To understand Basic Cost concepts, Elements of cost and cost sheet.
- 2) Helps in ascertaining the cost of material and labour and overhead allocation.
- 3) Providing knowledge about difference between financial accounting and cost accounting.
- 4) Impacts the knowledge of various costs on the basis of element behavior and functions.
- 5) Imparts knowledge of various costs on the basis of elements of cost, behaviour and functions.
- 6) Creates understanding on the various techniques of costing like Contract, Process, Standard and Marginal. Provides an overview of other cost accounting methods used in business.
- 7) Student's Capability to apply theoretical knowledge in practical situation will be increased.
- 8) Provides basic knowledge of production management,inventory management, and quality management.

Principles of Management:-

- 1) The objective of the course is to impart basic knowledge regarding the basic principles of management which will help students in effective and efficient management of a business.
- 2) They can manage finance and human resource of the working organization and coordinate the whole organization as a team to acquire maximum profit from minimum resources.
- 3) Provides detail knowledge about the Management process and various functions of management.

Business Statistics:-

- 1) To familiarize students with the applications of statistical techniques in business decision-making.
- 2) It enables the students to have such minimum knowledge of statistical techniques which is useful for business and financial organization.
- 3) Creates understanding on the various techniques of Measures of Central tendency.
- 4) Enables learners to acquire the knowledge of Dispersion, Skewness .
- 5) Creates understanding on the Linear regression and correlation.
- 6) It enables to understand Index Number And Probability and its applications in the business world.

Fundamental of Entrepreneurship :-

- 1) To provide basic knowledge to the students about the organisation and management of a business enterprise.
- 2) Gives clue to learners on entrepreneurship and exposes them to problems and prospects of entrepreneurs.
- 3) Conveys to the learners the current trends in business.
- 4) Enhances the Entrepreneurial abilities of the students and develops creativity for better functioning of the organization.

- 5) Familiarizes students with business planning in different types of entrepreneurs and the evolving concepts of entrepreneurial ship.
- 6) Students can discharge their social responsibilities as corporate person towards society by giving their contribution to improve health, education and infrastructural facilities in rural and urban areas of country. beneficial to the students in their life time.
- 7) Makes the learners understand the challenges of operating Business and measures to overcome these challenges.

B.Com Final

Income Tax:

- 1) It provides knowledge of main provisions of income tax act and its Applications.
- 2) The students can understand Income tax system properly and learn to assess the income tax of a person according to income tax provisions.
- 3) Creates an understanding of the basic concept of Direct Tax and basic definition related to Direct Tax and Assessee.
- 4) Provides learners an idea of the process and techniques of calculation of taxability and tax liability.
- 5) Imparts knowledge of Residential status of individual , HUF.
- 6) Enables students to acquire the knowledge of Head of incomes, Computation of total income and tax liability of individual, HUF .
- 7) Familiarizes students to understand the tax structure in our country.
- 8) Provides practical knowledge which will be beneficial to the students in their life time.

Auditing :-

- 1) Creates understanding regarding the need & benefits of having audit of financial statements.
- 2) Creates understanding of internal control and internal audit. Analyses an organization's operations and maintenance of systems of internal controls that can help detect and prevent various forms of fraud and other accounting irregularities.
- 3) It Provides knowledge of important audit process to control and manage all the financial and non financial activities of business.
- 4) Imparts knowledge of audit planning, procedures and documentation and assurance standards.
- 5) Imparts knowledge of Audit, types of audit , principles and techniques of auditing.
- 6) Studies the role of audit in Financial statements and execution of audit in companies.

Indirect Tax:-

- 1) Enables learners to acquire the knowledge of Goods and Services .
- 2) Explores the process of Registration, place and value of supply and computation of tax liability.
- 3) Provides an in-depth study on the various provisions of Indirect Tax laws
Studies their impact on business decision making.
Enables students to have knowledge about payment of Tax & Custom Act.

Management Accounting:-

- 1) It enables to know about the application of principles of management accounting, which are useful for managers in their decision making process.
- 2) Imparts Knowledge to the learner about how to prepare vertical financial statements.
- 3) Enables understanding of the functions, advantages, limitations of management accounting.
- 4) Acquaints the students with basic ratios analysis and interpretation of financial statements.
- 5) Creates understanding of what managers do and how they performs their jobs more effectively.
- 6) Help the students to acquire conceptual knowledge of the Management Accounting.
- 7) Enables them to know the concept of budgeting. Analyzes the cost of both person and operation and helps in preparation of budget and implementation of budgetary actions.
- 8) Facilitates decision making with the help of decision making techniques.
- 9) Guides students with the requisite data and helps in fixing the price of products manufactured and services rendered. Examines the current profitability & operational efficiency of the enterprise so that the financial health of the company can be determined.

International Marketing:-

- 1) Have developed an understanding of major issues related to international marketing.
- 2) Have developed skills in researching and analyzing trends in global markets and in modern marketing practice .
- 3) Be able to assess an organization's ability to enter and compete in international markets.
- 4) Furnishes learners with basic concepts and global framework for export marketing .
- 5) Provides information regarding product planning and pricing decisions for international Marketing.
- 6) Creates understanding of what is international Marketing and its benefits.

Principal of Marketing :-

- 1) Provides knowledge about what is Marketing,Identify the primary marketing activities of an organization.
- 2) Creates understanding of Determine market segments and target customers.
- 3) Be able to Apply principles of ethics and social responsibility in marketing.
- 4) It also enables to know about the application of marketing activities which are useful for managers in their decision making process.
- 5) It provides knowledge of Marketing Principles, activities in business world.
- 6) Learners can pursue careers as Market experts and also develop a better understanding of the markets as this course gives an in-depth understanding of the essential qualities and areas of expertise required for such jobs.
- 7) Intercepts and familiarizes students with different and basic concepts of marketing mix, MIS and Marketing Research .
- 8) Makes students aware about competitive strategies for market leader, and various aspects of market.
- 9) Highlights the role of advertising for the success of brands and its importance within the marketing function of the company.

B.Sc. (Home Science)

DEPARTMENT OF HOME SCIENCE

COURSE OUTCOMES OF B.Sc. (HOME SCIENCE) PROGRAMME

B.Sc. (H.Sc) Part -I

SNO	SUBJECT (PAPER) B.Sc. (H.Sc) Part -I	COURSE OUTCOMES
1	Basic Nutrition	<ul style="list-style-type: none">• Enable students to understand the functions of food & the role of various nutrients , their requirements & the effects of deficiency & excess.• Learn about the structure , composition , nutritional contribution & selection of different food stuffs , develop an ability to improve the nutritional quality of food.
2	Introduction to Resource Management	<ul style="list-style-type: none">• To create an awareness among the student about management in the family as well as the other systems.• To recognize the importance of wise use of resources in order to achieve goals.• The impact of human , activities on environment.• This course deals with the management of resources in the family with particular references to mobilising all the resources for achieving the family goals.
3	Introduction to Human Development	<ul style="list-style-type: none">• Describe how individual develop & change throughout the life span.• Identify how families & communities influence the process of growth & development.• Relate the principles of human development with self family & society.
4	Textile & Clothing	<ul style="list-style-type: none">• To acquaint with proper notion regarding choice of fabrics.• To develop skills in clothing constructions.• To acquaint with different textile & their performances.• Impart knowledge on different textile finishes.
5	Community Development	<ul style="list-style-type: none">• Be aware of the approaches to development.• Develop faith in the capacity of the people to take responsibilities for their own development.• Understand the ,meaning of the social change through development plans & programs in the

		context of the exiting socio-economics structures & systems.
6	Personal Empowerment & Computer Basics	<ul style="list-style-type: none"> • To become aware of the need , competencies & skills to be developed for empowerment & be motivated for self empowerment / self enhancement. • To become aware of interdisciplinarity of home science education & its potential for personal & professional enhancement. • Know the basics of computers. • To be able to use computers for education , information & research.

PRACTICAL OUTCOMES

B.Sc. (H.Sc) Part- I

S.NO	NAME OF THE PRACTICAL	PRACTICAL OUTCOMES
1	BASICS NUTRITIONS	Students will familiarize different methods of cooking, preparation & presentation of various recipes.
2	INTRODUCTION TO RESOURCE MANAGEMENT	A thorough understanding on Resource management.
3	INTRODUCTION TO HUMAN DEVELOPMENT	Learn to methods of making articles of Babykit, Toy or wearing Food and Immunity chart
4	TEXTILE & CLOTHING	Student acquaint with the basic practical knowledge of drafting stitching, weaving, dyeing and printing.
5	COMMUNITY DEVELOPMENT	Provide an insight into the modern approaches to socio-economic analysis of community and learnt to Preparation of Audio-Visual aids.
6	PERSONAL EMPOWERMENT & COMPUTER BASIC	Study fundamentals of Computer, MS office and internet.

B.Sc. (H.Sc) Part –II

SNO	SUBJECT (PAPER) B.Sc. (H.Sc) Part -II	COURSE OUTCOMES
1	Nutritional Management Health & Diseases	<ul style="list-style-type: none">• It briefly familiarize students with role of nutrition in common element.• Understand the concept of an adequate diet & the importance of meal planning.• Know the factors affecting the nutrients needs during the life cycle & the RDA for various age groups.• Gain knowledge about dietary management in common ailments.
2	Textile & Laundry Science	<ul style="list-style-type: none">• Acquire skill in textile dyeing & printing.• Understand concepts of mechanical & chemical finishing of textile.• Develop critical understanding of the techniques of laundry.
3	Community Nutrition & Applied life Science	<ul style="list-style-type: none">• Gain the basic knowledge of human anatomy & physiology.• Define the main structures composing human body.• Obtain an insight into the structure and functions of cells, tissues & organs in human body.• Gain basic knowledge of blood & blood circulation.
4	Communication Process	<ul style="list-style-type: none">• To understand the process of communication, especially in development work in rural & urban areas.• Understand the process of communication in development work.• Develop skills in the use of methods & media.• Gain knowledge on the process of communication, especially in development work in rural & urban areas.• Learn the communication channel & skill.

5	Life Span Development	<ul style="list-style-type: none"> • To develop understanding of various methods & materials, which can be used while working with children. • To promote creativity and use of different materials to allow for optimum development. • To develop awareness of important aspects of development during the whole life span. • To manage life crisis at every stage of life span.
6	Consumer Economics	<ul style="list-style-type: none"> • Gain knowledge on consumer protection laws & acts & reflect upon personal rights & responsibilities. • Enriched knowledge on market system. • Emerge as informed consumers. • Review the benefits of planned financial management.

PRACTICAL OUTCOMES

B.Sc. (H.Sc) Part- II

S.NO	NAME OF THE PRACTICAL	PRACTICAL OUTCOMES
1	Nutritional management health & diseases	Learn to therapeutic and normal diet planning cooking and presentation.
2	Textiles and laundry Science	Students will familiarize different methods of Tie & Dye printing and various stain removal techniques.
3	Community Nutrition & applied life sciences	Study of Histological slides of different organs, Spotting and blood practicals.
4	Communication Process	How to prepare Audio Visual Aids and evaluate effectiveness of various types of mass and media.
5	Life Span Development	The course inculcates numerous specific activities of infancy and toddlerhood, art activities, tearing cutting pasting and printing.
6	Consumer Economics	Able to analyze consumer behavior, consumer problems, consumer protection policies and consumer cooperatives.

B.Sc (H.Sc) Part –III

SNO	SUBJECT (PAPER) B.Sc (H.Sc) Part -III	COURSE OUTCOMES
1	Nutritional Biochemistry	<ul style="list-style-type: none">• Develop an understanding of the principles of biochemistry.• Understand chemistry of major nutrients.• Understand the biological process & system as applicable to nutritions.• Apply the knowledge acquired to human nutritions & dietetics.
2	Food Preservation	<ul style="list-style-type: none">• To learn the principles behind the methods of preservations.• Acquire skills to formulate food based products.• Explore the principle of preservation in fruits & vegetables based products.• Understand the stages of sugar cookery , quality of pectin & acidity in the development of preserved food products.
3	Early Childhood Education	<ul style="list-style-type: none">• Develop awareness of ECCE programs in different context in India.• Understand the planning & creating development & programmatic activities for children.• Know the importance of early childhood years & significance of interventions programs for early childhood development.
4	Extention Education	<ul style="list-style-type: none">• Learn about concepts and scope of extension in national development.• Able to interpret & evaluate an advocacy campaign for social mobilization.• Perceive the importance of extention education.• It will orient the students with creation , transmission & application of knowledge designed to bring out planned changes in the behaviour of people.
5	Foundation Of Art & Design	<ul style="list-style-type: none">• To understand family housing needs , house planning & financial consideration.• Principles of interior design as well as Indian ,regional , traditional &

		contemporary arts & their use. <ul style="list-style-type: none"> • Designing & furnishing of life space. • Understand & apply the principles of design in housing.
6	Apparel Making	<ul style="list-style-type: none"> • Develop the skills used in pattern making & construction. • Understand the use of component of a garment. • Explain the preparatory steps involved in garment construction. • Comprehend the concept of fit & designing for different figure types. • Acquire skills necessary for selection & evaluation of clothing.

PRACTICAL OUTCOMES

B.Sc. (H.Sc) Part- III

S.NO	NAME OF THE PRACTICAL	PRACTICAL OUTCOMES
1	Nutritional Biochemistry	Understand various quantitative methods of Identification of CHO, protein, Titration and hemoglobin estimation.
2	Food Preservation	Develops skill in formulation of various types of preserved food items.
3	Early Childhood Education	To plan the project and scientific activities for the children this enhances their learning capability.
4	Extension Education	Study about the fundamental of extension education and designing an advertisement for the product with relevant slogan.
5	Foundation Of Art & Design	This exposes students to various branches of arts including freehand drawing, sketching, floor decoration, furniture layout, flower decoration, wall paintings, graphic designs etc.
6	Apparel Making	Develops skill in making various types of embroidery and applique work.

DCA

PROGRAM OUTCOMES OF DCA

- It will equip the students with skills required for developing applications in Information Technology.
- The DCA is aimed at graduate with a computing background and provide a detailed coverage of the key concepts and challenges in data.
- Students will be able to learn the latest trends in various subjects of computer.
- Design and develop applications to analyze and solve all computer science related problems.
- Able to provide socially acceptable technical solution to real world problems with the application of modern and appropriate programming techniques.
- Design application for any desired needs with appropriate considerations for any specific need.

Course outcomes:

1st semester

DCA -101: essential of Information technology & OS

- Familiarity with parts of computer
- Understand the input and output devices.
- Appreciate the role of operating system as system software.
- Understand the fundamental hardware component that make up a computer's hardware and the role of each of these components.
- Understanding the difference between an operating system & application program.
- Basic ideas of storage devices, computer networks and programming languages.

DCA – 102: Essentials of Office Automation

- Understand the basic terminology of computers.
- Understand the practical concepts of MS Word, MS Excel, MS PowerPoint and MS access.
- Understanding the concept of Tally.

DCA – 103: Programming in C language.

- Understand the fundamentals of C programming.
- Students will acquire knowledge and skills of programming.
- Student will be able to develop logics which will help them to create programs, Applications in C language

Also by learning the basic programs construct they can easily switch to any other languages in future.

DCA – 104: Practical based on DCA 102 & 103.

To prepare students in understanding computer basics & to make aware of essentials of office automation using MS office.

To study basic concept of C programming & perform specific program on different topics with outputs.

2nd semester

DCA – 201: GUI – Programming in Visual Basic.

Design, Create, Build and Debug visual basic application.

Explore Visual Basic's IDE- Integrated Development Environment.

Write and apply decision structures for determining different operations.

Understand how to apply loop structures to perform repetitive task.

Understand how to apply procedure, sub procedure, function to create manageable tasks.

DCA – 202: E- commerce

Demonstrate and understanding of the foundation & importance of E- Commerce.

Analyze the impact of E-Commerce on business model and strategy.

Describe the infrastructure of E- commerce.

Describe the key features of internet, intranet and extranet & explain how they relate to each other.

Discuss legal issues and privacy in e-commerce.

Recognize and discuss global E-Commerce.

DCA – 203: HTML & Internet application

Understands the basics of HTML and Website design Principles.

Understands the concept of dynamic webpages and how to link it.

DCA – 204: practical based on DCA 201 and DCA 203

To prepare students to acquire frontend development skill using visual basic.

Prepare student in web designing using various web tools.

2.6.1 – PROGRAM OUTCOMES, PROGRAM SPECIFIC OUTCOMES AND COURSE OUTCOMES

M.Sc. CHEMISTRY

Programme outcomes

- After completing the programme student will be able to do research and go for higher studies.
- Students are prepared to give various competitive exams of chemistry like CSIR-NET , SET ,GATE etc.
- They will be able to learn about the potential uses of synthetic analysis , medicinal chemistry , natural products .
- To provide a broad aspect in chemistry and to stress on scientific reasoning and analytical problem solving techniques.
- To carry out experiments in the area of organic analysis , separation , estimation , semi micro analysis , conductometric and potentiometric analysis.

M.Sc. – I Semester

PAPER NO. CH-1 , Group theory and chemistry of Metal complexes

Course outcome

- To impart the knowledge of symmetry elements, symmetry operations, Point group and character table in students.
- To develop the understanding of various theories explaining the bonding of metal complexes.
- To impart the knowledge of structure , bonding and preparation of metal carbonyl and nitrosyl complexes.
- To develop the understanding of stability of metal complexes.
- To have a broad idea about isopoly and heteropoly acids of Mo and W .
- To have in depth knowledge of various metal clusters.

PAPER NO. CH-2 , Concepts in organic chemistry

Course outcome

- To gain knowledge of nature of bonding in organic molecules.
- To develop the understanding of aromaticity.
- To give students in-depth knowledge of conformational analysis and stereochemistry of various compounds .
- To have knowledge of preparation , structure, stability and reactivity of various reaction intermediates.
- To understand various elimination reactions.
- To impart knowledge of various types of pericyclic reactions.

PAPER NO. CH-3 , Quantum chemistry , Thermodynamics and Chemical dynamics – I

Course outcome

- To make students able to do various mathematical problems used in quantum chemistry
- To make students understand the concept of Schrodinger equation and its application to various system.
- To impart the knowledge of Maxwell's relations, partial molar properties , activity and fugacity and Gibbs Duhem equation.
- To develop the understanding of various concepts of electrochemistry like debye-huckel theory, Lippmann equation and ionic strength.
- To make students understand about the rate laws , order of reactions and various theories explaining the mechanisms of reactions.

PAPER NO. CH-4 , Theory and applications of Spectroscopy – I

Course outcome

- To make students understand about the basic concept of spectroscopy.
- To develop the understanding of principle and applications of microwave, electron diffraction and raman spectroscopy..

PAPER NO. CH-5 , Laboratory course – I

Course outcome

- To develop the skill of doing qualitative analysis of acid and basic radicals.
- To make students doing quantitative estimation of various compounds.
- To make students prepare various inorganic compounds.

PAPER NO. CH-6 , Laboratory Course – II

Course outcome

- To have the knowledge of critical micelle concentration of surfactants.
- To make students use pH-meter and doing various experiments.

M.Sc. – II Semester

PAPER NO. CH- 7, Transition metal complexes

Course outcome

- To develop the understanding of reaction mechanisms of transition metal complexes.
- To impart knowledge of electronic spectra and magnetic properties of transition metal complexes.
- To study the transition metal complexes with unsaturated organic molecules.
- To impart the knowledge of compounds with transition metal carbon multiple bonds.
- To have the understanding of fluxionality in organic compounds.

PAPER NO. CH-8 , Reaction mechanisms

Course outcome

- To understand the mechanisms of various aliphatic and aromatic nucleophilic and electrophilic substitution reactions.
- To understand the addition of electrophiles, nucleophiles and free radicals to carbon-carbon multiple bonds .
- To impart the knowledge of various name reactions like Perkins reaction and aldol condensation reaction.

PAPER NO. CH-9 , Quantum chemistry, Thermodynamics and Chemical dynamics – II

Course outcome

- To understand the applications of matrices, angular momentum and approximate methods in Quantum chemistry.

- To have an in-depth knowledge of various concepts of statistical thermodynamics and electrochemistry.
- To develop the understanding of fast reactions and various theories of unimolecular reactions.

PAPER NO. CH-10 , Theory and applications of spectroscopy – II

Course outcome

- To provide students in-depth understanding principle and applications of Ultraviolet and visible spectroscopy, Infrared spectroscopy, Mass spectroscopy and nuclear magnetic resonance spectroscopy.

PAPER NO. CH-11 , Laboratory course – III

Course outcome

- To make students able to synthesis various organic compounds by one step and two step process.
- To make students able to do analysis and separation of binary organic mixture.

PAPER NO. CH-12 , Laboratory course – IV

Course outcome

- To develop various computer skills in students
- To make students able to use spectrophotometer and analysis of compounds using it.

PAPER NO. CH – 13 , RESONANCE SPECTROSCOPY, PHOTOCHEMISTRY AND ORGANOCATALYSIS

Course Outcome

- To know the basic principle of electron spin resonance spectroscopy and hyperfine coupling, spin-orbit coupling and significance of g-tensors and application to transition metal complexes
- To gain the knowledge of nuclear quadrupole resonance spectroscopy with involving of quadrupole nuclei quadrupole moments, electric field gradient, applications.
- To study the principle, instrumentation and important applications of photoelectron spectroscopy:
- To gain the knowledge of Photo acoustic Spectroscopy (PAS), PAS –gases and condensed system and chemical and Surface applications.
- To understand the basic concepts of photochemical reaction, Stern Volmer equation, quantum yield and actinometry.
- To get an overview about rate of photochemical reactions.
- Enable the students to elucidate the photo-Fries reactions of anilides, Barton reaction, singlet molecular oxygen reactions and photochemical formation of smog.
- To study the important aspects of organocatalysis : Hydrogenation of alkenes, hydroformylation, monosubstituted acetic acid synthesis and Wacker oxidation of alkenes.
- To be familiarise with the important oxidative addition, reductive elimination and insertion and de-insertion and palladium-catalysed C-C bond forming reactions.

PAPER NO. CH – 14 ,CHEMISTRY OF BIOMOLECULES

Course Outcome

- To study the basic standard free energy change in biochemical reactions.
- To study the structure and function of haemoglobin, myoglobin, haemocyanins and haemerythrin.
- To get an overview about, zinc enzymes – carboxypeptidase and carbonic anhydrase, peroxidase and cytochrome P-450
- To be familiarize cyclodextrin-based enzyme models, calixarenes, ionophores and synthetic enzymes orsynzymes.
- To know the utility of enzyme and identification of active site by the use of inhibitors.
- To understand the structure and biological functions of coenzyme A thine pyrophosphate, pyridoxal phosphate and NAD⁺, NADP⁺, FMN, FAD.
- To learn the important aspects of techniques and methods of immobilization of enzymes and recombinant DNA Technology.
- To learn to carry out various types of binding processes in biological systems and forces involved in biopolymer interaction.
- To study the thermodynamics of biopolymer solution.
- To get insights into structure and functions of cell membrane.

PAPER NO. CH –15 , CATALYSIS, SOLID STATE AND SURFACE CHEMISTRY

Course outcome

- To understand the hard and soft acids and bases, alpha effect and enzyme catalysis.
- To know the surface active agents, critical micellar concentration and factors affecting the CMC of Surfactants

- To gain the knowledge structure of crystal, crystal defect and electronic properties and band theory of semiconductors
- To study the chemistry of polymer and different types of polymerization phenomena and kinetics of polymerization.

PAPER NO. CH –16 , ANALYTICAL TECHNIQUES AND DATA ANALYSIS

Course outcome

- To have an idea about the sample preparation, digestion and statistical analysis.
- To learn the data analysis technique such as precision and accuracy, types of errors, propagation of errors, normal distribution curve and standard deviation.
- To get an idea about the principle and instrumentation of various separation and extraction techniques
- To have an idea about principle, instrumentation, and application of TGA, DTA and DSC methods.
- To get a deep insight into the automated methods, principle, instrumentation and application of flow injection analysis.
- To be familiarise the principles and instrumentation of pH potentiometry, coulometry and conductometry.

PAPER NO. CH- 17 , LABORATORY COURSE – V

Course outcome

- To study the reaction between Acetone and iodine.
- To study the autocatalytic reaction
- To examine the substituent effect.

PAPER NO. CH- 18 , LABORATORY COURSE – VI

Course outcome

- To determine nitrate and sulphate spectrophotometrically.
- To separate using paper and thin layer chromatography.

M.Sc. – IV Semester

PAPER NO. CH- 19 , INSTRUMENTAL METHODS OF ANALYSIS

Course outcome

- To understand the ion chromatography: Ion exchange equilibrium, Ion-exchange packing and Inorganic Applications.
- To study of the Size exclusion chromatography: Column packing, Theory and applications.
- To get the basic facts of Supercritical fluid chromatography: Properties of supercritical fluid, SFC-Instrumentation and operating variables, comparison with other types of chromatography, applications.
- To understand the Capillary Electrophoresis and capillary electro chromatography
- To understand the X-Ray fluorescent method: Principles, Characteristics x-ray emission. Instrumentation, X-ray tube, radioactive sources. Wavelength dispersive instruments. Energy dispersive instruments. Analytical Applications- Qualitative Analysis.
- To study of the Proton Induced X-Ray Spectroscopy ; Theory, instrumentation and applications .
- To gain skill of apply Selectivity, sensitivity and interferences of atomic spectroscopy.

- To understand the study of Theory, instrumentation and application of flame photometry, AES, IC-AES and AFS.
- To study of the Theory, instrumentation and applications of flame and graphite furnace AAS, cold- vapour and hydride generation AAS.
- To understand of the Theory, instrumentation and application of hyphenated techniques i.e. GC/HPLC/MS-GC/IC/HPLC-ICP-MS.

PAPER NO. CH -20 , NATURAL PRODUCTS AND MEDICINAL CHEMISTRY

Course Outcome

- To study of the Terpenoids and Carotenoids: Classification, nomenclature, occurrence, isolation, general methods of structure determination of Citral, Geraniol, α -Terpeneol, Menthol, Farnesol, Zingiberene, Santonin.
- To understand of the Alkaloids: Definition, nomenclature and physiological action, occurrence, isolation, general methods of structure elucidation, degradation, classification based on Nitrogen heterocyclic ring, role of alkaloids in plant.
- To gain skill to apply Steroids: Isolation, structure determination and synthesis of Cholesterol, Bile acids, Androsterone, Testosterone, Estrone, bio synthesis of cholesterol.
- To study of the Plant Pigments: Occurrence, nomenclature and general method of structure determination.
- To understand the Drug Design Development of new drugs procedures followed in drug design, concepts of lead compound and lead modification, concepts of prodrugs and soft drugs, Structure-Activity Relationship (SAR), Factors affecting bioactivity, resonance, inductive effect.
- To study of the General introduction of pharmacokinetics and pharmacodynamics.
- To study of the Antineoplastic Agents: Introduction, Alkylating agents, antimetabolites, carcinolytic antibiotics, mitotic inhibitors.
- To understand the Antimalarials: Synthesis and properties of the following Antimalarial drug: 8-amino quinoline derivatives-Pamaquine, Primaquine, Pentaquine, Isopentaquine.
- To gain skill to apply Antibiotics: Constitution and synthesis of penicillins, chloramphenicol, tetracycline and streptomycin.

PAPER NO. CH –21 , MATERIAL AND NUCLEAR CHEMISTRY

Course outcome

- To study of the Fundamental concepts, Forces and Fluxes, Entropy production, Phenomenological Laws and Onsager's theory for biological systems, coupled reactions.
- To study of the Preparation and Properties of Nanoparticles, Materials-Metals, Ceramics (Oxide, carbides, sulphides, nitrides). Physical and Chemical Methods, Size and Shape controlled Synthesis, Sol-gel methods, Optical Properties, Electrical and Magnetic Properties, Application of Nanoparticles. Characterization of Nanoparticles (SEM, TEMetc.)
- To understands of the Properties of covalent bonds, bond length, inter bond angles, Force constant, bond and molecular dipole moment, molecular and bond polarizability.
- To study of the Biological macromolecules, Molecular receptors and design principle, cryptands, Cyclophanes, calixarenes and cyclodextrins.
- To study of the Nuclear cross section and nuclear radii, nuclear shells and magic numbers, theory of nuclear shell model, nuclear potentials, square well and simple harmonic oscillator potentials, application, liquid drop model, semi-empirical mass equation, application and limitations.

PAPER NO. CH –22 , ENVIRONMENTAL & APPLIED CHEMICAL ANALYSIS

Course Outcome

- To make students understands about the air pollution and the techniques to control the air pollution .
- To study of the Soil and water quality standards, monitoring and analysis of selected soil and water contaminants: COD, pesticides, heavy metals, POP's,

fluoride, cyanide, nitrate, phosphate, oil & grease, Geobiochemical impact of municipal solid waste, steel plants effluent, domestic sewage. Control devices of water pollutants.

- To understand the Introduction to general constituents of food-Proximate Constituents and their analysis, Additives-Introduction, types, study of preservatives colors and antioxidants and methods of estimation, adulteration - Introduction, types, test for adulterants.
- To impart the knowledge of Introduction of Cosmetics, evaluation of cosmetics materials, raw material and additives, Cosmetics colors, Perfumes in cosmetics, Cosmetics formulating, introduction, standards and methods of analysis-Creams, Face powders, Make-up, Shaving preparations, Bath preparations.
- To understand the Concepts and principles of analytical methods commonly used in the clinical species: i.e. ammonia, Nitrogen, Ca, Cl, CO₂, Fe, K, Li, Mg, Na, P, urea, glucose.

PAPER NO. CH -23 LABORATORY COURSE -VII

Course Outcome

- To develop the critical idea multi-step synthesis of organic compounds .
- To understand of the quantitative analysis and estimation of functional group.
- To gain skill to apply of the extraction of organic compounds from natural sources .

PAPER NO. CH -24 LABORATORY COURSE-VIII

Course outcome

- To development of the spectrophotometric determination and flow injection analysis and use the atomic absorption spectroscopy.
- To understand of the gravimetric determinations and chromatographic separations .

M.Sc. BOTANY

M.Sc. I Semester	Paper – 1. Cytology	This course helped the students to develop a firm foundation in the fundamentals of cell biology.
	Paper – 2. Genetics	The objectives of this course were to have an insight into mechanism of gene expression and its regulation in prokaryotes and eukaryotes.
	Paper – 3. Microbiology, Phycology and Mycology	The course aimed at making the students understand the diversity among virus, bacteria, cyanobacteria, mycoplasma, algae, fungi, lichen and mycorrhiza. The course is designed to familiarize the students with microbes and least developed plant groups. The students would know the economic importance and harmful effects of virus, bacteria, cyanobacteria, mycoplasma, algae, fungi, lichen and mycorrhiza.
	Paper – 4. Bryophyta, Pteridophyta and Gymnosperm	The students would develop understanding about the diversity, important characteristics, identification, classification, anatomy, reproduction, evolution along with economic importance of these three groups.
M.Sc. II Semester	Paper – 1. Taxonomy and Diversity of Plants	The course is an introduction to the methodology and principles of plant systematic and patterns and origin of seed plant diversity. Lectures and practicals provide needed to recognize and characterize several plant families and higher taxa that are important elements of ecosystem. The students are made to understand the key methods and principles of biological classification and nomenclature.
	Paper – 2. Molecular Biology	Students would understand the role of plant cytoskeleton and accessory proteins in major cellular processes of plants. Students would also focus on various components of the eukaryotic nuclear and organellar genome, with special reference to their regulatory role. They understood the principle mechanism of genome replication, maintenance, function and regulation of expression.
	Paper – 3. Plant Physiology	Students would be able to understand various physiological life processes in plants. They would also gain knowledge about the various uptake and transport mechanisms in plants and are able to

		coordinate the various processes. They understood the role of signaling compounds. During the course students would gain knowledge about various mechanisms such as channel or transport proteins involved in nutrient uptake in plants.
	Paper – 4. Plant Metabolism	This course deals with various processes of plants like photosynthesis, respiration, translocation, absorption and nitrogen metabolism. The students also got insight into the various types of plants movements.
M.Sc. III Semester	Paper – 1. Plant Development and Plant Resources	Students would develop the understanding of growth, development and reproduction in plants as well as understand the physiological and metabolic changes happening along with the environmental impact. Apart from this, students also got an idea about the major patterns and processes in evolution of seed plants. This course also helped the students to explore the intimate relationship between plants and our lives. Topics covered under this course include our use of plants as medicines, food, beverages and textiles
	Paper – 2. Plant Ecology – I (Ecosystem and Vegetation Ecology)	Students would understand the factors leading to environmental degradation, ecology of vegetations, their reasons and their impact on the ecosystem and environment. This knowledge can help to form strategies for conservation and sustainable management under the given legislative measures.
	Paper – 3. Biotechnology and Genetic Engineering of Plants and Microbes	Students would understand the different methods used for genetic transformation of plants, use of <i>Agrobacterium</i> as a vector for plant transformation, components of a binary vector system. Principles and methods used for phenotypic, genetic and molecular analysis of transgenic plants. Students would also acquire understanding of basic principles and modern age application of recombinant DNA technology. Learned molecular and technical skills along with applications of the instrumentation and also the ethics of r DNA technology.
	Paper – 4. Molecular Plant Pathology – I	Students were able to know the terminologies in plant pathology, understood the scope and importance of plant pathology and know the prevention and control measures of plant diseases and its effect on economy of crops.

M.Sc. IV Semester	Paper – 1. Plant Reproduction and Utilization of Resources	Students would be able to understand about plants anatomical structure, their developmental patterns, male and female gametophytes and fruits development, vascular tissues, wood anatomy, TS, TLS and RLS, mechanical tissues, secretory tissues, laticifers and secondary growth. Students would also understands the use of plant resources to produce valuable products and also understood the role of plants as environmental indicators and protectors.
	Paper – 2. Pollution and Biodiversity Conservation	Students would have understand the importance of ecology and conservation, also developed awareness of conserving natural resources and maintaining the integrity of the indigenous culture.
	Paper – 3. Biotechnology – II (Plant Cell, Tissue Culture and Organ Culture)	Students would understand the basic concepts of plant tissue culture and its applications, micropropagation methods and somatic embryogenesis.
	Paper – 4. Molecular Plant Pathology	Students learned about the pathogenic microorganisms and their mode of entry and control measures, diseases and their causal agents, importance of plant protection methods.

M.Sc. ZOOLOGY

The objectives of the program are as follows :-

Students after completing the course they can become researchers and teachers in any fields of zoology. They may also involve in Pisciculture, Sericulture, Apiculture. They can make the public aware of biodiversity and environment in the society. They can spread awareness regarding general health in the society.

M.Sc. – I Semester

Paper-1

Biosystematics, Taxonomy and Biodiversity

To provide an idea on basic concepts of Biosystematics and Taxonomy .To provide an understanding on procedure keys in taxonomy. The students will understand importance of Biodiversity.

Paper-2

Structure and function of Invertebrates

To provide an in depth understanding on the structure and function of Invertebrates. To study the various organ systems of Invertebrates. To help study the fine structure of organs and system with their physiological activities.

Paper-3

Population genetics and evolution

To provide a broad and deep understanding on population genetics and evolution. To help study in detailed account of destabilizing forces. The proved an understanding on the process and theories in evolutionary biology. To give deep knowledge about evolution of Man, Horse and Camel etc.

Paper-4

Tools and Techniques in Biology

To equip the students to use the tools and techniques for research work.

M.Sc. – II Semester

Paper-1

Molecular cell Biology and Biotechnology

To help the students to understand the importance of cell and cell organelles in organism. To introduce new develop meant in molecular biology. To understand the modern biotechnology practices and its application in medical, industrial and agricultural areas.

Paper-2

General Physiology and Endocrinology

This course will provide students with deep knowledge in human Physiology and Endocrinology. Students will acquire a broad understanding of the hormonal regulation and control in physiological activities. To provide an in depth understanding on biosynthesis of hormones.

Paper-3

Development Biology

To introduce the concepts and process in development biology. To study the formative movements in some early chordates embryos. To study the cell and tissue interaction in development. To provide an in depth knowledge principles of embryology.

Paper-4

Quantitative biology and computer application

The students will learn computer based presentation, statistical analysis of data using software. To aware students importance of hypothesis testing and test of significance in research.

M.Sc. – III Semester

Paper-1

Comparative anatomy of vertebrates

To study and compare the anatomy of various organ systems of vertebrate. To provide an over view of the anatomy of vertebrates with origin, evolution and various physiological aspects. To learn the physiological and anatomical peculiarities of vertebrates.

Paper-2

Animal behaviour

To impart basic knowledge on animal behaviour pattern and their role. To acquire knowledge about

The history of Ethology. To provide deep knowledge about hormonal effect on various behavioural patterns to stimulate the curiosity about the behaviour of animal around theme.

Paper-3

Environment Physiology and Population Ecology

To provide deep knowledge of population and community dynamics. To help the students to understand levels and mechanism of adaptation of different habitat. To provide basic knowledge of stress physiology. To aware the students the effect of Yoga and meditation in human life.

Paper-4

Immunology and parasitism

The course will be provide deep knowledge of different cell participant in immune system. The students gain knowledge about kind of immunoglobulin. To make them aware of the immune response to viral bacterial and protozoan pathogen. To aware the students the kind of vaccines.

M.Sc. – IV Semester

Paper-1 Biochemistry

To provide an idea on structure and function of protein biomolecule. To understand the role of carbohydrates and lipids in organism. To understand importance of vitamins and enzymes in animals physiology. To equip the students to chemistry and biological importance of nucleic acid.

Paper-2

Neurophysiology

To provide an intensive and depth knowledge to the students in neurophysiology. To help study in detail account of fine and ultrastructure, function and physiology of nerves system. To give deep knowledge of mechanism of transmission of nervous system. To provide an in depth understanding on tools and technique use in neurophysiology.

Paper-3

Fish structure and function

To provide an in depth understanding on the fine structure of various organs system of fish. To study the origin, evolution, systematic position and classification of fishes. To study the various organ systems of fishes with physiological activities. To give detail knowledge about adaptation, behaviour and sexual cycle.

Paper-4

Pisciculture and economic importance of fishes

To aware the students for management fish farm. The student gain knowledge about fish culture in India. Equip the students interested in fish farming which can lead to self-employment opportunities.

Program Outcomes of M A Psychology

- To give students a comprehensive understanding of the principles of Psychology .
- To gain the skill to design and carry out testing and experiments in psychology .
- To understand the basic psychological process.
- To build a professional temper in having the career in the applied fields of psychology.
- To have a basic idea about Methods of Psychological Research and its different techniques.
- To make student aware of the use and application of psychology for society and daily life.
- To make students capable of understanding the social behavior and human relations.
- To gain sufficient knowledge about psychopathology and mental health.
- To get a deep insight into the Conceptual and theoretical perspectives in Educational Psychology and guidance and counseling.
- To get an overview about the human development and theories of personality.

I-SEMESTER

PAPER – I BASIC PSYCHOLOGICAL PROCESSES – I

COURSE OUTCOMES

- To understand the basic facts of Psychophysics and Signal detection theory,
- To be familiarized with the knowledge of subliminal perception, perceptual styles and it's ecological, cultural and information processing perspectives of perception.
- To develop the understanding of Perceptual Organization, Constancy and Illusion.
- To impart essential theoretical knowledge on Concept, Theories, and determinants of Attention.
- To impart essential theoretical knowledge on Motivation and Emotion

PAPER – II SOCIAL PSYCHOLOGY

COURSE OUTCOMES

- To understand the basic facts of Current trends in Social Psychology and its theoretical perspective.
- To develop skills for Person perception and impression management

- To understand the general characteristics of Social Influence Processes: Leadership
- To make students capable of understanding and studying the Nature, Characteristics, Development and theories of attitude.
- To get insight into the prosocial behavior, aggression and violence.

PAPER – III BASIC RESEARCH METHODOLOGY

COURSE OUTCOMES

- To have a basic idea about Methods of Psychological Research and Variables.
- To study the Ethical issues in psychological research, Research problem, hypothesis, and Sampling.
- To understand the Cross Sectional and Longitudinal Research designs like Correlational, factorial, randomized block, matched group, quasi – experimental, Graceo Latin Square and time series design.
- To inculcate the wisdom of Central tendencies, Dispersion, Normal Probability Curve, Null hypothesis, Type I and Type II errors and Levels of significance.
- To gain the knowledge of Methods of collecting data: Observation, Questionnaire, and Interview, including Test & Scales.

PAPER – IV PSYCHOPATHOLOGY

COURSE OUTCOMES

- To know the Concept of psychopathology and Classification systems in psychopathology.
- To have a basic idea about theoretical background and approaches to psychopathology.
- To make student aware about the Types, symptoms and management of Anxiety disorder.
- To understand the types, symptoms and management of Psychotic disorders.
- To get an overview about the Substance related disorders including Mental Retardation and developmental disorders.

PAPER – V PRACTICUM

COURSE OUTCOMES

- To make students capable of conducting laboratory experiments under the following areas: 1. Meaningfulness in Learning. 2. Feedback in verbal learning. 3. Chunking. 4. Episodic memory. 5. Effect of types of information on impression formation. 6. Meaningfulness and selective attention. 7. Differential lumen-method of constant stimuli. 8. Mental fatigue. 9. Verbal conditioning. 10. Effect of feedback on self-concept.
- To develop skills required for the qualitative analysis of Field Work in the area of 1. Work motivation 2. D.A.T. 3. Mental health 4. Frustration tolerance 5. Occupational stress 6. Depression

II SEMESTER

PAPER – VI BASIC PSYCHOLOGICAL PROCESSES – II

COURSE OUTCOMES

- To be familiarized with the knowledge of Learning Process with special emphasis on Classical and Instrumental conditioning along with reinforcement
- To study the Experimental analysis of behavior: Behavior modification, shaping Discrimination learning. And neurophysiology of learning.
- Enable the students to predict the methods, materials and organizational processes of verbal learning.
- To imbibe the information about learning theories: Hull, Tolman, and Skinner including Cognitive approaches in learning.
- To inculcate the wisdom about memory and forgetting.

PAPER – VII GROUP PROCESSES AND CULTURAL PSYCHOLOGY

COURSE OUTCOMES

- To know the Concept of Group Dynamics, Group behavior, Group effectiveness and Group Cohesiveness.

- To impart essential theoretical knowledge on Leadership with meaning, function, styles and effectiveness.
- To understand the basic facts of Social issues like Poverty, Caste, gender, population, Communal tension and harmony.
- To develop the understanding of culture and Behavior with special emphasis on Cognition, emotion and Organization.
- To know the Concept of Culture and Behavior in relation to Health and Personality.

PAPER – VIII ADVANCE RESEARCH METHODOLOGY

COURSE OUTCOMES

- To gain sufficient knowledge for Experimental Design: Single Factor, Randomized block, 2X2 factorial design, repeated measures (on one factor),
- To obtain sound knowledge in understanding the ANOVA: one-way and two-way: Randomized and Repeated Measure Design. ANCOVA, Post ANOVA tests.
- To acquire mastery in Measures of relationships: bi-serial, point bi-serial, tetracoric, phi, Multiple and partial Correlations.
- To know the basics principle of Regression (simple and multiple) and Factor analysis (Assumptions, Methods, Rotation and interpretation)
- To have a basic idea about Use of computer in psychological researches, Research report writing (APA style).

PAPER – IX PHYSIOLOGICAL PSYCHOLOGY AND HEALTH BEHAVIOURS

COURSE OUTCOMES

- To learn the Basic concepts and Methods of Physiological psychology:
- To gain the knowledge to draw the structure of Sensory system (Vision and Audition.) and Human nervous system.
- To get an exposure to the Sleep and waking (Stages, Disorders and Physiological mechanisms.)

- To gain insight in Approach to therapy (Psychoanalytic, Biological, Behavioral, Behavioral medicine and spiritual therapy).
- To know the applications of mental health promotion and maintenance, present issues and trends in health psychology.

PAPER – X PRACTICUM

COURSE OUTCOMES

- To have the practical knowledge about the any five test among the List of tests: -
1. 16 P.F. /6 P.F. / 4P.F. 2. Problem solving ability 3. Aptitude 4. Mixed type group Intelligence test 5. Levenensons Scales for Locus of Control 6. Digit memory scope 7. Aggression. 8. Semantic ink block test. Field Work: 1. Achievement motivation 2. Intelligence 3. Personality 4. Parent child relationship 5. inferiority & insecurity
- To have a basic idea about conducting Field studies allotted by the departmental committee.

III SEMESTER

PAPER – XI PERSONALITY AND INDIGENOUS PSYCHOLOGY

COURSE OUTCOMES

- To imbibe the information about Personality: Meaning, Perspectives & Measurement of Personality. Concept of mature Personality, Personality Theory-Problems & Procedures.
- To get an overview about Psychodynamic Perspective: Freud, Erikson and Adler with the part of structure, dynamics and development.
- To study the Trait theories (Allport, Cattel and Eysenck.) Theories of personality.
- To make student aware of Cognitive, Behavioral and Humanistic approach (Kelly, Bandura and Roger's) theories of Personality.
- To get a brief idea about Indigenous concept and Models of Personality including Yogic, Sankhya and Current Researches in the field of Personality.

PSYCHOLOGICAL ASSESSMENT – I

COURSE OUTCOMES

- To make students capable of understanding the Psychological Assessment, along with Levels of Assessment.
- To provide the conceptual framework of Scaling, Scale construction techniques and difference between tests, scales, questionnaire and schedule.
- To get insights into Construction of Psychometric tools, Steps in test Construction, item writing, pre try out, item difficulty level, discrimination power, Psychological test and types of Psychological test.
- To have an idea about the Standardization process of psychometric tools, test reliability, validity: and Norms.
- To be familiarized with the adaptation of tests. Test taking Response Styles, Social desirability, Acquiescence and Faking and Psychological testing in Applied Field of Life.

PAPER – XIII EDUCATIONAL INSTRUCTIONAL PSYCHOLOGY – I

COURSE OUTCOMES

- To get a deep insight into the Conceptual and theoretical perspectives in Educational Psychology to study the behavioristic, social learning and Piaget's theories and their application in teaching.
- To know the Information processing Models, Instructional Models and Programmed learning through concept, Characteristics and models.
- To imbibe the information about learning styles: Nature, approaches, measurement, and modification.
- To understand the Individual and group differences in intelligence, Theories of intelligence and Gender differences issues in the classroom.
- To inculcate the wisdom for Learning, Motivation, Study Habit and Levels of Learning

PAPER – XIV

BASICS OF PSYCHOLOGICAL GUIDANCE AND COUNSELLING – I

COURSE OUTCOMES

- To be familiarizing with the Nature, Need and Functions of Guidance. Principles of Guidance.
- To get insight into the Techniques of Appraising the client: Non-Standardized Methods- Anecdotal Record, Auto biography, Case study, Sociometric, Observation, Rating scale, Questionnaire.
- To gain the knowledge to apply Techniques of Appraising the Client: - Standardized Methods- Intelligence, Personality, Aptitude, Interest, and Achievement.
- To know the Organization of a guidance program in relevance to Guidance under 10+2+3 educational pattern.
- To understand the Special areas of Guidance: Vocational Guidance, Educational Guidance, personal Guidance, and Problems of Guidance in India.

PAPER – XV PRACTICALS

COURSE OUTCOMES

Enable students to perform any five of the following to be completed in the Laboratory training.

1. Knowledge of results. 2. Effect of social support on conformity. 3. Attribution of achievement outcomes. 4. Zeigarnik effect. 5. Level of aspiration as a function of success or failure. 6. Reminiscence in motor learning. 7. Short Term Memory. 8. Effect of group on individual judgment

IV SEMESTER

PAPER – XVI LIFE SPAN DEVELOPMENT

COURSE OUTCOMES

- To get an overview about the introduction, Development, Nature, Stages and principles of developmental Psychology including Maturation vs. Experience.
- To understand the Theories of Human development: Psychodynamic, Psychosocial, Behaviorism and social learning theories, Cognitive development and Socio-Cultural.
- To obtain proficiency in Research methodology, Measurement Techniques and in Ethical issues in Research for Developmental Psychology.
- To develop the insight for Biological foundation of development, Development of language and communication, Emotional, Social personality and Moral development.
- To understand the Adulthood, Middle and Old age in reference of Characteristics, Psychological changes and adjustment.

PAPER – XVII PSYCHOLOGICAL ASSESSMENT - II

COURSE OUTCOMES

- To get acquainted with the Concept and Measurement of Intelligence, Major Tests of Intelligence developed under Western and Indian Cultural set up.
- To be familiarizing with the concept and Measurement of Aptitude and Achievement along with Major Tests developed under Western and Indian Cultural set up.
- To impart essential theoretical background of basic concepts and mechanism in Test of Personality like Projective and Psychometric Approaches including Major Test of Personality developed under Western and Indian Cultural set up.
- To get an idea about the Test of Adjustment, Values, Interest, Stress and Anxiety developed under Indian condition.
- To acquire the general idea of Neuro-Psychological Testing.

- To develop the insight about Emotional Intelligence its Concept and Major Test of emotional Intelligence developed under western and Indian cultural set up.

PAPER – XVIII EDUCATIONAL INSTRUCTIONAL PSYCHOLOGY – II

COURSE OUTCOMES

- To have a basic idea about Effective Teaching, Classroom Management and Characteristics of effective teachers.
- To study the Teaching methods, Student centered teaching. Class room Management and teaching in small groups:
- To give students a comprehensive understanding of the Exceptionality and social education in special emphasis on physically disabled students, students with cognitive disabilities, brain dysfunction and communication disorders.
- To be able to define Students with emotional and behavior disorder like Attention deficit disorder (ADD), Attention Deficit Hyperactive Disorder (ADHD) and Gifted and talented students.
- To get acquainted with the Educational Assessment, Measurement and evaluation.

PAPER – XIX BASICS OF PSYCHOLOGICAL GUIDANCE AND COUNSELLING – II

COURSE OUTCOMES

- To make student aware of the basics principle of Counseling, Counseling and Psychotherapy, Intervention, Goal and objectives of Counseling.
- To understand the role of Techniques of Appraising the client through Standardized Techniques of Intelligence, Personality, Aptitude and Interest Interview.
- To enable the students to get a clear idea about Approaches types, Evaluation, of counseling along with Follow up and placement services.

- To study the Characteristics of a good Counselor, Counselor's Training, Issues and trends in guidance and counseling and Ethical standards.
- To acquire the general idea of Special areas of Guidance and Counseling: Marital, Family. Counseling for the pre-school and elementary school children.

PAPER – XX PRACTICALS

COURSE OUTCOMES

Enable students to perform two field studies, one from the area of life span development and psychological assessment, and another from the area of educational psychology and guidance and counseling of the special groups under the supervision of a concerned teacher

Program Outcomes of M A Geography

M. A. 1 Semester

Geomorphology Paper -1

- . To investigate of basic facts of scientific ideas that is useful like earth movement.
- . An understanding of the layered of earth.
- . Practically allow students to explore how scientists construct understanding and explanation of things.
- . To know how physical process provides good explanation of degradation.

Climatology Paper- II

- . To know determine future climate expectations.
- . To study the variable and average short and long term weather conditions.
- . To examine the climatic condition all over the earth.
- . To know history and the effects of the climate.

Geographical Thought Paper – III

- . This should enable the student to critically look at the contents of other courses at post graduate level as logically integrated with the broad current of thought the subject has witnessed in the distant and recent past.
- . Student will demonstrate and advanced understanding of the historical development of geographical thought.
- . Student can understand the major current philosophical and theoretical debates in geography.

Geography of India Paper- IV

. To understand basic physical systems that effect life.

. To learn the location of places and their characteristic.

To understand to evolution of people, their ideas, place and environments.

To explain how process changed the surface of the earth.

M. A. II Semester

Economic and Natural Resource Management Paper -VI

. To understand the structure of the spatial economy and it's development.

. To study where things are found and how they develop.

. To explain how technology changed economic activities.

. To explain how the process of human and physical systems changed the economy.

Oceanography Paper- VII

. To study the great effects on sea stores of earth.

. To understand how seas affected and changes in earth's environment.

. To know how much oceans important source of food in future.

. To study the biodiversity and it's significance of the oceans.

Regional development and planning Paper-VIII

. To reduce the conflict and wastage of resources in different regions.

. To explain the maximum utilization of resources.

. To improve facilities with full potential in various locations.

. To balanced regional development in different regions.

Social Geography Paper – IX

- . Evaluate the social issues such as Racism, Caste conflict, Social distance.
- . Understand the causes of social inequality and their impact of society.
- . Student can understand indicators of social well-being and quality of life.
- . Discuss about the social space, social groups and intra-urban mobility.
- . Student can define the Cultural region of the world.
- . Analysis the social set up in Indian villages.

M. A. III Semester

Population Geography Paper-XI

- . Understand the distribution of population and its problem.
- . Understand population policies and its importance.
- . Student aware about the population policies.
- . Evaluate the population growth theory and migration theories

Settlement Geography Paper-XII

- . To understand the spatial organization of society.
- . To recognize spatial distribution of people and settlement.
- . To know interdependence of settlement and become a better civilization.
- . To be able to make relationship between environment and society.

Biogeography And Ecosystem Paper – XII

- . Student will get familiarized with interface between Biology and Ecology.
- . Able to geography converging and forming our biosphere.
- . Student will be able to discuss about ecosystem services.
- . Able to apply interaction of biotic and a biotic resources.
- . They can identify ecological aspects of environment.

Research Methodology Paper-XIV

- . To study more help get a solution to a research problem.
- . Addressing usually requires fields observation and spatial areas.
- . To research critically evaluated in study area.
- . To develop skills such data analysis.

M. A. IV Semester

Urban Geography Paper-XVI

- . To understand acquaint with spatial characteristics of human settlement.
- . To reflected the features and nuances of the potential types of settlements.
- . To understand prime objective and necessary ingredient for sustainability and Resilience
- . To identify the economic and social development of place and their activities.

Agriculture Geography Paper –XVII

- . To study relationship between agriculture and human activities.
- . To explain effects that lead to formation of the surface in different regions.
- . To explain which factors decided the type of farming in various areas.
- . To teach students a wide variety of skills management and technology.

Environment Geography Paper –XVIII (B)

- . Importance of environment conservation-
the preservation of environment is important for bio-diversity and the living beings.
- . Resource conservation-
how resource conservation is essential for the survival of human life like water, metals, soil etc.
- . Water as a key element of human life-
spreading awareness through the slogans like “*Jal hai to kalhain*”. How it is important to maintain water levels which will further help in food conservation and water cycle in the environment

. Population explosion-

To educate people in general about the finite resources and the importance of creating a balance between resources and population so that population explosion could be avoided in future.

Field work (Physical, economic and social reports) Paper- XIX

. To experiments most commonly process of primary data collection.

. To examine how researchers to better monitor on fields.

. To know the way scientific methods interact with real life.

. Understanding about patterns and relationship between spatial characteristics and distributions at local level.

Geographical Information System and Quantative Technics, Paper-XX

. To study the improvements of labour savings system from automotive work flow.

. To implemented GIS in its logistics operations.

. To take decision about location strategic to the success of an organization.

. To improved communication and GIS based visualizations and situations.

M A Economics

<u>Programme Outcome</u>	M. A. (Eco.)	<ul style="list-style-type: none"> - Students will be eligible for various career options like Indian economic services, Assistant professor, Indian statistical services, Banking and other financial services. - Students can go for further studies like M.Phil., Ph.D. - Students will not only be able to understand various macroeconomic concepts but also be able to explain it. - Students will also be able to take small research projects related to social and economic problems.
<u>Course Outcome</u> M. A. I	Micro Eco.- I	<ul style="list-style-type: none"> - To help students to understand the behaviour of individuals & firms in making decisions on the allocations of limited resources.
Macro Eco.- I		<ul style="list-style-type: none"> - It helps students to study the aggregates and to provide overall idea about national economic policies and its implications.
Quantitative Methods		<ul style="list-style-type: none"> - The course will help the students understand the issues regarding data collection, presentations, analysis and interpretation of data.
Indian Economy		<ul style="list-style-type: none"> - It helps in developing understanding of the students related to different sectors of Indian economy.
Industrial Eco.		<ul style="list-style-type: none"> - - Students will be exposed to various concepts regarding industrial economics. - The course will provide understanding about Indian industries.
<u>Course Outcome</u> M. A. II	Micro Economics- II	<ul style="list-style-type: none"> - The students will be exposed to some mathematical concepts like game theory, linear programming and also the welfare economics.
Macro Eco.- II		<ul style="list-style-type: none"> - Students are exposed to various macro economic issues like saving and investment, balance of payment and money supply etc.
Research Methodology & Computer Application		<ul style="list-style-type: none"> - The students will be able to handle a research project related to economics and social sciences. - The students will be able to collect data, analyse and interpret it. - It will also enable the students to process data with the help of various computer programs.
Indian Economic		<ul style="list-style-type: none"> - To learn how to think critically about public policy issue.

	Policy	- It will help in anticipating aggregative economics analyses and establishes the functional relationship among large aggregates.
	Labour Eco.	- It will help to understand various issues related to labour like low wages, migration etc.
<u>Course Outcome</u> M. A. III	Eco. Of Growth	- <i>Explain the economic development theories and related development strategies.</i>
	International Trade	- To explain the rationale behind international trade. - To explain various barriers & other issues related to international trade.
	Public Finance	- It will help the students to analyse the impact of public policy on the allocation of resources and the distribution of income in the economy.
	Environmental Eco.	- It will enable the students to understand the problem of environmental degradation. - It will develop the understanding of the relation between economy and the environment. - It will also help in understanding the role of tax and subsidy to curb the environmental damages.
	Demography	- To make the students aware of the importance of population studies. - It helps in understanding the population problem and other issues related to population in India.
<u>Course Outcome</u> M. A. IV	Eco. Of Devt. & Planning	- Understanding various growth models. - Imparting knowledge of Indian Plan Strategies.
	International Eco.	- To make the students aware about international trade theories, international institutions like world bank, IMF, International trading blocks like ASEAN, NAFTA, SAARC etc.
	Public Eco.	- It will enable the students to understand the federal finance system in India. - It will also make them understand about Indian tax system. - The students will also be able to know the fiscal position of the Chhattisgarh government.
	Eco. Of Social Sector	- The paper explains the economics behind the education and health. - It also helps them to understand the human devt. Index and other social devt. Indicators.
	Viva- Voce	- Evaluation of the learning of the students. - It provides exposer for the students to direct personal interview.

Program Outcomes of M A Political Science

M.A. 1ST SEMSTER (POLITICAL SCIENCE)

PPAER – I POLITICAL THOUGHT

INDIAN POLITICAL THINKERS - 1ST SEMESTER

- Helping students in accessing knowledge in the field of Indian political thought in the initial stage of their study.
- Appraising the student about India's contribution towards the enrichment of the field of political thought.
- Gathering knowledge regarding India's orientation towards politics and appraising the students about the growth of modern democratic political consciousness in India.
- Helping the student in their future course of study in India's political thought.

PAPER - II : INDIAN GOVT. AND POLITICS

1. To explain basis of Indian constitution and main features of Indian Constitution.
2. To explain fundamental rights and duties. Directive principles of state policy and Amendment Process.
3. To explain Function of Union executive, President, Prime minister and council of minister and their power.
4. To explain about function of Judiciary supreme court their power and reforms.
5. Challenges of Indian polity.

PAPER - III COMPARATIVE GOVERNMENT AND POLITICS-

Accruing knowledge about the structure & functioning of five major governments (**UK, USA, CHINA, RUSSIA AND SWITZERLAND**) in the world.

- Having a comparative study of these governments in a glance.
- Helping the student in building their base in the study of comparative government.
- Accruing knowledge about different forms of government found in different political systems in the world.
- Students have a stronger and more informed perspectives on approaches in studying political. governments and political systems comparatively. They become familiar with the primary theories and concepts that form the building blocks of the subfield.

PAPER - IV : INTERNATIONAL ORGANIZATION

1. Explanation of the nature and evolution of International Organization. Student will clear the coordination among nation , Nation State and International System.
2. To explain the League of Nation : Formation , Function, Achievements. Merits and Demerit and evaluation.
3. Student will clear united nation; formation structure, peace of coercive Measures to Settle the Disputes in United Nations The role of UN to Social and Economic Development.
4. Explanation of the regional Organization.

M.A. IIND SEMSTER (POLITICAL SCIENCE)

PAPER - I WESTERN POLITICAL THINKER

- It helps student discover the political philosophy that form the basis of politics in the Western world, to interpret the political philosophies of the Greek, Roman, French, English and German philosopher in historical context as well as relate them to contemporary politics.
- Origin of the knowledge in political Thought.

PAPER - II STATE POLITICS IN INDIA

1. Student will be Informed about state executive Governor function and power of Governor . Chief minister and council of ministers.
2. Student will be explain State Legislature , State Judiciary
3. Explanation Demand for state autonomy, demand for the creation of New state, Interstate , River water disputes.
4. Explanation the State planning commission, State Finance Commission, State Election Commission, Major Trends in State Politics of India.

PAPER - III COMPARATIVE GOVERNMENT AND POLITICS-

Accruing knowledge about the structure & functioning of five major governments (UK, USA, CHINA, RUSSIA AND SWITZERLAND) in the world.

- Having a comparative study of these governments in a glance.
- Helping the student in building their base in the study of comparative government.
- Accruing knowledge about different form of government found in different political systems in the world.
- Students have a stronger and more informed perspectives on approaches in studying political. governments and political systems comparatively. They become familiar with the primary theories and concepts that form the building blocks of the subfield.

PAPER - IV INDIAN FOREIGN POLICY

1. To explain meaning , Nature , Determinants of Indian Foreign Policy : Internal and external principles.
2. Analyzing the relations of India and USA, India and Russia .
3. To explain the India's Policy and Relations towards Her Neighbors Pakistan, China and Shrilanka.
4. To explain the India and United Nations Organization, the India and Nuclear Disbarment.

M.A. IIIrd SEMSTER (POLITICAL SCIENCE)

PAPER - I Principles of International Politics

1. Student will be explained Evolution of International Politics Nature, Scope, Methods
- 2 Student will be informed theories of International Politics.
- 3 Explanation of concept of power balance of power, collective security, International Ideology and morale.
- 4 Student will clear CTBT, NPT, Regional organization.

PAPER - II Public Administration Part -I

1. Student will be explained public Administration Definition, Nature ,Scope, Approaches of Study.
2. Explanation of Theories of organization.
3. Student will clear chief Executive types and role, Departmental organization.
4. Student will clear public corporation Recruitment, Promotion and Training, Retirement, Union Public service commission, Bureaucracy.

PAPER - III RESEARCH METHODOLOGY

1. Understand And Apply Research Approaches, Techniques And Strategies In The Appropriate Manner For Managerial Decision Making
2. Conceptualize The Research Process
3. Demonstrate Knowledge And Understanding Of Data Analysis And Interpretation In The Relation To The Research Process
4. Develop An Understanding Of Various Research Designs And Techniques
5. Developed And Understanding Of The Ethical Dimensions Of Conduction Applied Research

PAPER - IV : GOVT. AND POLITICS OF CHHATTISGARH

1. Student will able to know origin of Chhattisgarh.
2. To Explain local self Govt. and Panchyati Raja, District administration in Chhattisgarh, Role of a collector.
3. Student will be explained Loksabha and Vidhansabha in Chhattisgarh voting behavior.
4. Explanation of Emerging Trends in Chhattisgarh Politics , Development in Chhattisgarh and Scheme of Development .

M.A. IVth SEMSTER (POLITICAL SCIENCE)

PAPER - I : CONTEMPORARY ISSUES OF INTERNATIONAL POLITICS

1. Explaining Non Alignment in international Politics.
2. To explain cold war and End of cold war cause and result, New world order.
3. Student will clear important issues in post cold war era – Globalization, Human Rights, Environment, Terrorism .
4. Analyzing the foreign policy of Important countries India, USA, China and Russia.

PAPER - II : PUBLIC ADMINISTRATION PART -II

1. Explaining the personal Administration- System to solve the problem .
2. Analyzing the finance administration , Budget process in India, Control over administration by Executive and judiciary.
3. Analyzing the administration Behavior
4. Explanation of corruption in administration, Ombudsman, Lokpal, Lokayukt.

PAPER - III RESEARCH METHODOLOGY

1. Understand And Apply Research Approaches, Techniques And Strategies In The Appropriate Manner For Managerial Decision Making
2. Conceptualize The Research Process
3. Demonstrate Knowledge And Understanding Of Data Analysis And Interpretation In The Relation To The Research Process
4. Develop An Understanding Of Various Research Designs And Techniques
5. Developed And Understanding Of The Ethical Dimensions Of Conduction Applied Research

PAPER - IV POLITICAL HISTORY OF CHHATTISGARH

1. To explain Historical , Geographical and cultural , Background of Chhattisgarh.
2. Student will know about role of British Govt. before independence and Chhattisgarh in Independence India.
3. Contribution of Chhattisgarh in National movement .
4. To explain political thinkers and Social thinkers.

DEPARTMENT OF SOCIOLOGY

M.A.SOCIOLOGY

Statement of Programme Specific Outcomes (M.A) (SPOs):-

1. Understand the basic concepts in Sociology and develop an understanding about macro and micro perspectives in Sociology
2. Comprehend the various features of Indian Society and culture including unity in diversity; Indian social structure and understanding rural, urban and tribal India
3. Develop an understanding of various aspects of doing social science research with focus on methodology; making research proposal, doing fieldwork and report writing
4. Analyse the critical aspects of Sociology of Development and Planning, the development theories and the Planning system for development
5. Understand the characteristics, social structure, institutions and problems of tribal community in India
6. Develop an understanding about various aspects of Industry; Population studies
7. Understand the philosophical foundations of Sociology and its application
8. Evaluation of Development Policies

Statement of Course Outcomes (COs)

Course Outcomes: By the end of this course, the students will be able to:

M.A FIRST SEMESTER

PAPER 1: CLASSICAL SOCIOLOGICAL TRADITION

1. After studying this course, student would be able to understand the basic nature of the sociological theories.
2. This course provides students to the basic and conceptual knowledge about the basic concepts and sociological theories.
3. This course also helps students to understand the historical roots of Indian sociology.

PAPER 2:PHILOSOPHICAL AND CONCEPTUAL FOUNDATION OF RESEARCH METHODOLOGY

1. Research Methodology is a hands-on course designed to impart education in the foundational methods and techniques of academic research in social sciences and business management context.

2. Research scholars would examine and be practically exposed to the main components of a research framework i.e., problem definition, research design, data collection, ethical issues in research, report writing, and presentation.
3. Once equipped with this knowledge, participants would be well-placed to conduct disciplined research under supervision in an area of their choosing.
4. In addition to their application in an academic setting, many of the methodologies discussed in this course would be similar to those deployed in professional research environments.

PAPER 3: SOCIAL CHANGE IN INDIA

1. Understand meanings and significance of social transformation.
2. Develop ability to critically engage with contemporary changes.
3. Facilitate theoretical thinking about transformation.

PAPER 4: RURAL SOCIOLOGY

1. Understand and demonstrate how self develops through various process of interaction.
2. Cultural lag to understand social change.
3. Studying Rural Sociology.
4. Understand and analyze social, economic and political aspects of rural society.

PAPER 5: PRACTICAL -I

1. Understand the basics of field work, preparation of tools, interview guide and case study
2. Construct tool of data collection
3. Understand the process of data analysis
4. Make research proposal

M.A SECOND SEMESTER

PAPER 6:CLASSICAL SOCIOLOGICAL THINKERS

1. Application of theories and concepts from classical sociological theories to develop intellectual openness and curiosity.
2. Appreciation of the classical concepts and theories to develop awareness of the limits of current knowledge.

PAPER 7:QUANTITATIVE RESEARCH TECHNIQUES IN SOCIOLOGY

1. Correctly use basic quantitative terminology.
2. understand and apply basic quantitative reasoning
3. design a short on-line survey to resolve the problems with existing data sets

PAPER 8:SOCIOLOGY OF DEVELOPMENT

1. Explain Conceptual Perspective on Development
2. Describe Theories of Development
3. Identify paths of Development
4. Describe interrelationship between social Structures and Development
5. Identify and analyze Development Issues in India
6. Describe Development Planning and Policies

PAPER 9:INDIAN RURAL SOCIETY

1. Define Rural Sociology and demonstrate nature, subject-matter and importance of studying Rural Sociology.
2. Understand and analyze social, economic and political aspects of rural society.
3. Demonstrate how caste system operates and its importance in rural society.
4. Define and demonstrate democratic decentralization of power and importance of Panchayati Raj Institution in bringing about changes in rural society.
5. Understand the changes that are taking place in rural society with reference to agrarian reforms and rural development programs.

PAPER 10: Practical-II

1. Practical experience based on field work and preparation of tools questionnaire, interview schedule preparation and tabulation.
2. Construct tool of data collection
3. Understand the process of data analysis
4. Make research proposal

M.A THIRD SEMESTER

PAPER 11:CLASSICAL SOCIOLOGICAL THEORIES

1. After studying this course, student would be able to understand the basic nature of the sociological theories.
2. This course provides students to the basic and conceptual knowledge about the basic concepts and sociological theories.
3. This is fundamental and very basic theoretical roots of sociological theories that enhance the knowledge of the learners.
4. This course would provide the very fundamental insights to the learners which further support to understand the modern and post-modern sociological theories.

PAPER 12: SOCIAL MOVEMENTS IN INDIA

1. Explain Social Movements and Types of Movements
2. Describe Reform Movements
3. Describe Radical/ Revolutionary Movements
4. Understand Environmental and Women's Movements
5. Explain the impact of Social Movements on Social Policy
6. Learn about new social movements of Dalit's, women, Ethnic and environment

PAPER 13: PERSIPCTIVE OF STUDY TO INDIAN SOCIETY

1. Explain Approaches to the Study of Indian Society.
2. This course would provide knowledge about the very fundamental thoughts and perspectives of Indian scholars as well as sociologist about the Indian society.
3. This course has also significance in the case of qualifying the JRF/NET/SET examination for sociology.
4. The course has importance to provide foundational, ideological, sociological and social anthropological base to the Indian sociology.
5. The learners will be understood the different roots of Indian sociology. This course enriches the knowledge of learners about the Indian society also.

PAPER 14:INDUSTRY AND SOCIETY IN INDIA

1. Describe the Nature and Scope of Industrial Sociology; Growth of Industrialization, Industrial Revolution and its impact on Society.
2. Elaborating on Changing Structure of modern Industrial enterprises and principles of Organization – Formal and Informal.
3. Understand Scientific Management of F.W.Taylor, Human Relations Approach of Elton Mayo.
4. Elaborate Human Relations in Industry; Fordism and Post- Fordism.
5. Explain Industrial Conflicts and means of Settlement of industrial Disputes
6. Understand Impact of Globalization on Industry and Labour.

PAPER 15:CRIMINOLOGY

1. Provide students with a learning experience that will help instil deep interest in the subject; develop broad, balanced knowledge and understanding of key criminological concepts, principles and theories; and equip students with the appropriate tools of analysis to tackle problems in the field.
2. Learners will be able to acquire knowledge regarding crime, its changing profile and various theoretical perspectives on crime.
3. Learners will develop a sociological understanding towards crime and criminal justice in our society

M.A FOURTH SEMESTER

PAPER 16:MODERN SOCIOLOGICAL THEORIES

1. Learn about symbolic interactionism contribution of G.H.Mead, H.Blumer
2. Understand origin, basic postulates of phenomenology with contribution of Schutz and Berger
3. Learn ethnomethodology its origin and basics with contribution of Garfinkel and Goffmen
4. Understand origin and development of critical theory of Adorno and Habermas
5. Learn post modernism theory of Foucault and Derrida
6. Understand all the criticism of above mentioned theories

PAPER 17: COMPARATIVE SOCIOLOGY

1. Identifying the distinctive contribution made by the comparative perspective to sociological analysis.
2. Learn historical and social context of emergence of sociology in the west and the Europe.
3. Understand the central themes in comparative sociology.
4. Learn the theoretical concerns in comparative sociology and current debates along with its criticism.
5. Learn all the on-going debates on “For sociology of India”.

PAPER 18: CONTEMPORARY ISSUES IN INDUSTRY

1. Elaborate on Definition, Nature and Scope of Industrial Sociology
2. Explain Growth of Industrialisation, Industrial Revolution and its Impact on Society, Changing Structure of Modern Industrial Enterprises, Principles of Organisation - Formal and Informal
3. Describe Sociological Theories related to Industry and Society
4. Write about Trade Union Movement in India
5. Explain Industrial Disputes and Settlements
6. Describe the Labour Problems; Role of ILO and Commitment and Motivation of Workers

PAPER 19: CRIMINOLOGY: CORRECTIONAL AND ADMINISTRATION

1. Learn the importance and roots of correction to prevent crime
2. Learn the meaning and significance of correction, correction programmes in prison, rehabilitation programme
3. Understand the problems of correctional administration
4. Learn about victimological perspective, policing and judiciary

PAPER 20: PROJECT REPORT

1. Student must prepare the project report on rural and urban problems.
2. This will enable them to understand the different aspects of sociological problems.
3. Make research proposal
4. Construct tool of data collection
5. Learn fieldwork modalities
6. Understand the process of data analysis

PGDCA

PROGRAM OUTCOMES OF PGDCA

- It will equip the students with skills required for developing applications in Information Technology.
- The PGDCA is aimed at graduate with a computing background and provide a detailed coverage of the key concepts and challenges in data.
- Students will able to learn the latest trends in various subjects of computer.
- Design and develop applications to analyze and solve all computer science related problems.
- Able to provide socially acceptable technical solution to real world problems with the application of modern and appropriate programming techniques.
- Design application for any desired needs with appropriate considerations for any specific need.

Course outcomes:

1st semester

PGDCA -101: Introduction to software organization

- Familiarity with parts of computer
- Understand the input and output devices.
- Appreciate the role of operating system as system software.
- Understand the fundamental hardware component that makeup a computer's hardware and the role of each of these components.
- Understanding the difference between an operating system&application program.
- Basic ideas of storage devices, computer networks and programming languages.

PGDCA – 102: programming in C

- Understand the fundamentals of C programming.
- Students will acquire knowledge and skills of programming.
- Studentwill be able to develop logics which will help them to create programs, Applications in C language
- Also by learning the basic programs construct they can easily switch to any other languages in future.

PGDCA – 103: Office automation & Tally

- Understand the basic terminology of computers.
- Understand the practical concepts of MS Word, MS Excel, MS PowerPoint and MS access.
- Understanding the concept of Tally.

PGDCA – 104: Practical based on PGDCA 103.

- To prepare students in understanding computer basics & to make aware of essentials of office automation using MS office.

PGDCA – 105: Practical based on PGDCA 102.

- To study basic concept of C programming & perform specific program on different topics with outputs.

2nd semester

PGDCA – 106: GUI – Programming in Visual Basic.

- Design, Create, Build and Debug visual basic application.
- Explore Visual Basic's IDE- Integrated Development Environment.
- Write and apply decision structures for determining different operations.
- Understand how to apply loop structures to perform repetitive task.
- Understand how to apply procedure, sub procedure, function to create manageable tasks.

PGDCA – 107: Database Management System

- Knowledge and understanding database and their design & development.
- Intellectual cognitive / analytic skill: Normalization of databases.
- Practical skill: Using SQL.
- Gather data to analyze and specify the requirement of a system.
- Design system components and environment.

PGDCA – 108: Essential of E- commerce & HTML

- Demonstrate and understanding of the foundation & importance of E- Commerce.

- Analyze the impact of E-Commerce on business model and strategy.
- Describe the infrastructure of E-commerce.
- Describe the key features of internet, intranet and extranet & explain how they relate to each other.
- Discuss legal issues and privacy in E-commerce.
- Recognize and discuss global E-Commerce.
- Understands the basics of HTML and Website design Principles.
- Understands the concept of dynamic webpages and how to link it.

PGDCA – 109: practical based on PGDCA 106, PGDCA 107 and PGDCA108

- To prepare students to acquire frontend development skill using visual basic.
- Prepare student in web designing using various web tools.

PGDCA -110: Project

Date :- 10-05-2021



PRINCIPAL

GOVT KAMLA DEVI RATHI MAHILA PG
MAHAVIDYALAYA, RAJNANDGAON (C.G.)

