

ARTS SCIENCE AND COMMERCE COLLEGE INDAPUR		
A.Y. 2020-21		
Programme Outcomes (POs), Programme Specific Outcomes (PSOs) & Course Outcomes (COs) for ARTS FACULTY		
Department of English		
Programme Outcomes (POs) Of English Department B. A.		
PO1	Understanding and Knowledge:	A graduate student is expected to be capable of demonstrating comprehensive knowledge and understanding both theoretical knowledge in all disciplines
PO2	Skilled communicator	Students became aware of memoir literature. Students became aware of line drawing literature.
PO3	Practical skills	Students get acquainted with the nature of linguistics. Students get acquainted with the conditions of study of linguistics. Students should understand the applied aspects of linguistics.
PO4	Scientific knowledge skill	To acquaint the students with the method of official correspondence. To acquaint the students with various aspects of journalism to get it done.
PO5	Problem Analysis	Students able to apply appropriate techniques for solving research related problems.
PO6	Literary Ability	Students get acquainted with English literary history writing Students studied the authors and works of major literary trends of the ancient, devotional and ritual periods.
PO7	International Language	Students got to know the vocabulary of English. Students get acquainted with state language, national language, contact language and international language.
PO8	Writing Skills	Evaluative vision of students developed. The meeting minutes writing skills of the students were improved
PO9	Ethics	Apply ethical principles and commit to environmental ethics and responsibilities and norms of the biodiversity conservation.
PO10	Target to Specialization	Developing the ability to demonstrate proficiently in the experimental techniques and methods for analysis, appropriate for their area of specialization within biology.
Programme Outcomes (PSOs) Of English Department B.A.		
PSO1		Understand the nature and basic concepts of Literature and Criticism
PSO2		Understand the nature and basic concepts of Linguistics.
PSO3		improve communication skills
PSO4		Ability to use language for specific purpose
PSO5		enhance language skills, Speaking, Listening, Reading, Writing
Class	Course	Course outcomes (COs)
Compulsory English		CO1. Development of literary and linguistic test of the newly admitted students.
		CO2. Improvement of communication skills in English
		CO3. Enrichment of Grammatical sense and writing skills.
		CO4. Developing an ability for dialogue and group discussion.
		CO1.Development of liking for English literature
Optional English		CO2.Clear understanding of the aims and objectives of course



F.Y.B.A.(Semester)		CO3.Knowledge of the basic function of Literary Language.
	Functional English Paper I	CO 1. Organs of Speech
		CO 2. Learning Grammar
		CO3. Words, Accent, sentences and weak forms
	Functional English Paper II	CO1. Introducing oneself and others
		CO2. Describing objects and narration skills
		CO3 Reading dialogues with proper accents
		CO4. Presentation on given topics
S. Y. B. A.(semester)	Compulsory English Panorama: Values and Skills through Literature	CO 1.Strengthening the literary and linguistic test of the students.
		CO 2. Improvement of communication skills in English
		CO 3. Enrichment of Grammatical sense and reading skills.
		CO 4. Ability of group discussion and oral presentation
	Discipline Specific Course (DSC-1A)	CO 1. Introduction of elements of drama.
		CO 2. Development of students liking for the stage.
		CO 3. Enhancement of the sense of technique of characterization.
		CO 4. Improvement of stage daring of the students.
	Discipline Specific Course (DSC-2A)	CO 1. To acquaint students with the terminology in poetry criticism (i.e. the terms used in appreciation and critical analysis of poems)
		CO 2. To encourage students to make a detailed study of a few sample masterpieces of English poetry
	Skill Enhancement Course-SEC-1A	CO 3. To enhance students' awareness in the aesthetics of poetry and to empower them to read, appreciate and critically evaluate poetry independently
		CO 1. To familiarize students with the various components of language.
		CO 2. To develop overall linguistic competence of the students.
		CO 3. To introduce students to some advanced areas of language study.
	Skill Enhancement Course-(SEC-2A)	CO 4. To prepare students to go for detailed study and understanding of language.
		CO 1. Enhancing the skill of using English for everyday communication
		CO 2. To acquaint the students with the verbal and nonverbal communication
		CO 3. To create opportunities to access exposure of speaking in various contexts
	Functional English Paper III	CO 4. To acquaint and familiarize the students with soft skills
		CO1. Vocabulary, prefix and suffix
		CO2. Elaboration of concepts
		CO3. Different types of Report
	Functional English Paper IV	CO4 language used for Radio and TV programme
		CO1. Verbal and Non-verbal Communication
		CO 2. Reading Newspaper, situational conversations
		CO3. Group Discussion and group activities
	Compulsory English	CO4. Interview skills
		CO 1. Improvement of speaking skills in English.



T Y B A(Annual)	Compulsory English	CO 2. Enrichment of the Grammatical sense and news reporting.
		CO 3. Skills for compering and rapid reading.
		CO 4. Perfection of the use of idioms and phrases
	Special English Paper III	CO.1. Introduction of the novel as genre of literature
		CO2. Sensitization of the element of fiction
		CO.3. Knowledge of the novels
		CO.4.Introduction to the critical analysis of prose passages
	Special English Paper IV	CO.1.Enrichment of critical views of the students
		CO.2.Development of broad views in students about various approaches
		CO.3. Study of the interpretation of various critics
		CO.4.Knowledge of different critical terms
	General English Paper III	CO.1.Enrichment of competence in English
		CO.2.Introduction of clauses and phrases
		CO.3.Illustration of pragmatics
		CO.4. Development of the poetry writing skill
	Functional English Paper V	CO1. Acquainting students to new career options
		CO2. Various career in Language
		CO3. Creating awareness about language changes from one media to the other
		CO4. Language activities of media through exposure
		CO5. To impart translation skills related to media
	Functional English Paper VI	CO1. Possibilities of self-employment
		CO2. Provide basic sources of information regarding SSI
		CO3. Idea of self-employment through field work, study reports and interviews
		CO4. Overall personality development through key competency modules
		CO5. Create possibility of focused writing
Department of Marathi		
		Programme: B.A. (MARATHI)
		Programme Outcomes (POs)
PO 1		Get introduced to Marathi literature, language and culture.
PO 2		Ethical professional and ideological were nurtured in the students.
PO 3		Understand the form and elements of the novel and learn the journey and genre of the novel.
PO 4		Writing for the media, he wrote several video clips for the newspaper.
PO 5		Develop ability to appreciate and evaluate selected Biographies and Autobiographies in modern Marathi Literature.
PO 6		Understand the nature of the process of literary creation and the concept of Literary genus.
PO 7		Gained knowledge of the training required for publishing and editing.
PO 8		Students understood how Rural & Dalit literature was created after the post-independence period.



PO 9	Ethics	Develop ability to appreciate and evaluate selected Biographies and Autobiographies in modern Marathi Literature.
PO 10	Target to Specialization	Understand the form and elements of the novel and learn the journey and genre of the novel.
		<b>Programme Specific Outcomes (PSOs) B.A.</b>
PSO1		Students understood how Rural & Dalit literature was created after the post-independence period.
PSO2		Writing for the media, he wrote several video clips for the newspaper
PSO3		Develop ability to appreciate and evaluate selected Biographies and Autobiographies in modern Marathi Literature.
PSO4		Ethical professional and ideological were nurtured in the students.
PSO5		Gained knowledge of the training required for publishing and editing.
		<b>Programmeme: M.A. (MARATHI)</b>
		<b>Programme Specific Outcomes (PSOs)</b>
PSO1		Students understood how Rural & Dalit literature was created after the post-independence period.
PSO2		Writing for the media, he wrote several video clips for the newspaper
PSO3		Develop ability to appreciate and evaluate selected Biographies and Autobiographies in modern Marathi Literature.
PSO4		Ethical professional and ideological were nurtured in the students.
PSO5		Gained knowledge of the training required for publishing and editing.
		<b>Programme Outcomes (POs) M.A.</b>
PO 1		Get introduced to Marathi literature, language and culture.
PO 2		Ethical professional and ideological were nurtured in the students.
PO 3		Understand the form and elements of the novel and learn the journey and genre of the novel.
PO 4		Writing for the media, he wrote several video clips for the newspaper
PO 5		Develop ability to appreciate and evaluate selected Biographies and Autobiographies in modern Marathi Literature.
PO 6		Understand the nature of the process of literary creation and the concept of Literary genus.
PO 7		Gained knowledge of the training required for publishing and editing.
PO 8		Students understood how Rural & Dalit literature was created after the post-independence period.
PO 9		Develop ability to appreciate and evaluate selected Biographies and Autobiographies in modern Marathi Literature.
PO 10		Understand the form and elements of the novel and learn the journey and genre of the novel.
<b>Class</b>	<b>Course</b>	<b>Course outcomes (COs)</b>
	Marathi katha	CO1 To understand the nature, motivation, purpose, characteristics and movement of the literary genre of travelogue. CO2 To appreciate and analyze the assigned travelogue. CO3. Philosophical analysis of essay and descriptive literature CO4. To develop the ability to understand and use language appropriately
	Marathi Ekankika	CO1. Assess the interactional processes, love and aggression in our day today life. CO.2. Understand group dynamics and individual in the social world. CO.3. Understand the basic psychological processes and their applications in day-to-day life. CO.4 Develop the ability to evaluate cognitive processes, learning and memory of an individual.
	G2 Bhashik koushalya vikas aani adhunik marathi sahitya prakar	CO1. Conducting live interviews for various media. CO2 To understand the nature, motivation, purpose, characteristics and movement of the literary genre of travelogue.
	S1 Adhunik marathi sahitya	CO1 To appreciate and analyze the assigned travelogue.





S.Y.B. A		CO2. Philosophical analysis of essay and descriptive literature
		CO3. To increase the introduction of various types of literature in modern Marathi literature
	S2 Sahitya vichar	CO1. understand them, to develop the taste for literature and to increase the ability to appreciate the work of art
		CO2. Snippets of compelling news writers as well as splash-headlines and reviews from newspapers.
		CO3. Compilation of news from different newspapers about the same incident.
		CO4 To develop the ability to understand and use language appropriately.
		CO5. Philosophical analysis of essay and descriptive literature
T.Y.B. A	G3 Bhashik koushalya vikas aani adhunik marathi sahitya prakar	CO1. Literary history inclined students will study
		CO2. To provide a broad introduction to the literary tradition in relation to assigned works of art,
		CO3. Students will have knowledge of the cultural conditions of the medieval period
	S3 Madhyayugin Marathi Vangmaacha Sthul Eitihas	CO1. To develop the ability to understand and use language appropriately.
		CO2 Philosophical analysis of essay and descriptive literature
		CO3. To understand the role and nature of language in cognition. Language Skills, Abilities: Developing
	S4 Varnanatmak Bhashavidnyan	CO1. To explain and apply the interrelationship of different inventions and communication media of language skills.
		CO2. To know about the use, need and nature of Marathi in office business work.
		CO3. Acquiring writing skills required for office and business communication.
		CO4. To review the functioning of print electronic media.
M.A- 1	Prasarmadhmansathi Lekhan Koushalya	CO1. To understand literary form and purpose on the basis of Indian and Western linguistic thought.
		CO2. To understand the process of language formation
		CO3. To understand the language and style of literature
		CO4 To study Marathi language historical Marathi literature and Marathi culture.
		CO5 To develop appreciation and appreciation of historical literature.
	Sahitya Smiksha	CO1 To develop a social life through the study of historical literature.
		CO2 To develop applied skills of historical Marathi language.
		CO3 To introduce historical stories and literary genres
		CO4 To understand the process of language formation
		CO5 To understand the language and style of literature
	Nemlelya Arvachin Sahityakrutincha Abhyas	CO1. To study Marathi language historical Marathi literature and Marathi culture.
		CO2. To develop appreciation and appreciation of historical literature.
		CO3. To develop a social life through the study of historical literature.
		CO4. To develop applied skills of historical Marathi language.
		CO5. To introduce historical stories and literary genres
	Loksahityachi Multatve Ani Marathi Loksahitya	CO.1 To understand language form, features and functions.
		CO.2 Explaining the need for language study.
		CO3. To give a brief introduction to the branches and various methods of language study.
		CO4. To understand the structure, function and process of self-formation of vagina.
		CO5. To understand phonology, phonemic thought and phonemic system of Marath
	Prasarmadhmansathi Lekhan Koushalya	CO1.To understand the causal tradition of the production of rural literature in the post-independence period.
		CO2. To treat the form and function of rural literature.



MA- 2		CO3. To evaluate the development of various sentence types including rural.
		CO4. To consider the contribution of rural literature, the speed and direction of its development.
		CO5. Literary history inclined students will study
	Sahity Sanshodhan	CO1. To study the causes, traditions and challenges posed by Dalit literature in the post-independence period.
		CO2. To know the nature of pain and rebellion expressed in Dalit literature.
		CO3. To evaluate the development of various literary forms produced by Dalit literature
		CO4. To understand the process of language formation
		CO5. To develop appreciation and appreciation of historical literature.
	Nemlelya Arvachin Sahityakrutincha Abhyas 2	CO1. To understand the process of language formation
		CO2. To understand the language and style of literature
		CO3. To study Marathi language historical Marathi literature and Marathi culture.
		CO4. To develop appreciation and appreciation of historical literature.
		CO5. Conducting live interviews for various media.
	Loksahityachi Multatve Ani Marathi Loksahitya 2	CO1. To understand the social and cultural background of the medieval period.
		CO2. To understand the history of Marathi language and literature according to period.
		CO3. To understand the language and style of literature
		CO4 To study Marathi language historical Marathi literature and Marathi culture.
		CO5 To develop appreciation and appreciation of historical literature.
<b>Department of Political Science</b>		
<b>Programme Outcomes (POs) -B.A.</b>		
PO1		To inculcate Constitutional Values.
PO2		To create awareness regarding active participation in Politics.
PO3		To create awareness regarding challenges of Indian Democracy.
PO4		To develop unbiased views about social problems & issues.
PO5		To create social awareness among students
PO6		To develop scientific approach.
PO7		To create awareness about National Unity and Integrity.
PO8		To inculcate Democratic values
PO9		Voting awareness.
PO10		To encourage students to develop Research oriented learning.



		<b>Programme Outcomes (PSOs) -B.A.</b>
PSO1		Constitutional Values are inculcated in students and attitudes are created.
PSO2		Government systems was introduced.
PSO3		The Challenges Faced by the Democratic, Governance system was identified.
PSO4		Scientific Approach Developed.
PSO5		leadership qualities developed in students.
<b>Programme Outcomes (POs) -M.A.</b>		
PO1		To inculcate Constitutional Values.
PO2		To create awareness regarding active participation in Politics.
PO3		To create awareness regarding challenges of Indian Democracy.
PO4		To develop unbiased views about social problems & issues.
PO5		To create social awareness among students
PO6		To develop scientific approach.
PO7		To create awareness about National Unity and Integrity.
PO8		To inculcate Democratic values
PO9		Voting awareness.
PO10		To encourage students to develop Research oriented learning.
<b>Programme Specific Outcomes (PSOs) -M.A.</b>		
PSO1		Constitutional Values are inculcated in students and attitudes are created.
PSO2		Government systems was introduced.
PSO3		The Challenges Faced by the Democratic, Governance system was identified.
PSO4		Scientific Approach Developed.
PSO5		leadership qualities developed in students.
<b>Course Outcomes (COs)</b>		
F.Y.B.A. (Semester)		CO1To acquaint students with the important features of the Constitution of India and with the basic framework of Indian government.
	INTRODUCTION TO INDIAN CONSTITUTION	CO2. Learning of background of our constitution federal system structure of our state and central govt. party system election process
	AN INTRODUCTION TO POLITICAL SCIENCE	CO1.Important sub themes of Political Science as a discipline
		CO2 Approaches to study Political Science
		CO 3. Basic Concepts and Values in Political Science
	WESTERN POLITICAL THOUGHT	CO1. Major traditions of thought that have shaped political discourse in different parts of the world.
		CO2. The great diversity of social contexts and philosophical visions
	POLITICAL JOURNALISM	CO1. Complex relationship between the communication, media and power politics.
		CO2. Critical appraisal of practices of political image management, campaigns, propaganda and censorship.
		CO3.Indian context of political Journalism



	BASICS OF INDIAN CONSTITUTION	CO1. To acquaint students with the important features of the Constitution of India and with the basic framework of Indian government.
		CO2. To familiarize students with the working of the Constitution of India.
T.Y.B.A.		
(Annual)	S-3 Public Administration	CO1. This paper is an introductory course in public Administration.
		CO2. The paper covers personal public administration in its historical context.
		CO3. Students learn more about the recent development in new public administration.
		CO4. Knowledge of our budget and its processes.
	S-4 International Politics	CO1.This paper deals with concepts and dimensions of international relations.
		CO2.Students learn different aspects of balance of power leading to the present situation of unipolar world
		CO3.Highliting of the various accepts and conflict, resolution, and collective security.
	G-3 Modern Political Anyalysis	CO1.Learning of ideology like nationalism Gandhism, Fascism Political Ideology.
		CO1.Students will learn the role of different ideology and their impact in politics.
		CO1.Each ideology will be critically studied in its historical context.
		CO1. Knowledge about various ideologies like nationalism fascism, Marxism Gandhism.
	PO-C1: Traditions of Political Thought	CO1This course is meant to serve as a window on the major traditions of thought that have shaped political discourse in different parts of the world over the last three millennia
		CO2.It stresses the great diversity of social contexts and philosophical visions that have informed the ideas of key political thinkers across epochs.
	PO-C2: Administrative Theory	CO1Public Administration is an essential part of a society. In last few years the profession of Public Administration is going through changes
		CO2.Paper introduces changing trends in the field of Public Administration.
	PO-C3: Political Institutions in India	CO1 The course introduces the student to the leading institutions of India's political system and to the changing nature of these institutions.
		CO2 Apart from explaining the structure and functions of the main institutions the course will try to acquaint students with the idea of institutional balance of power as discussed in the Indian constitution and as developed during the functioning of Indian democracy over the past seven decades.
	PO-O1- Modern Political Ideologies	CO1 This Course is meant to acquaint students with the character and trajectory of modern political ideologies.
		CO2 It seeks to clarify the key differences between ideological and other modes of thought, and to introduce debates such as End of Ideology and End of History.
	PO-C4: Comparative Political Analysis	CO1 The purpose of this course is to acquaint the student with the sub-discipline of comparative politics.
		CO2 It expects the students to understand the comparative methodology and dynamics of domestic politics across countries.
	PO-C5: Theory of International Politics	CO1 Students need a brief history of international politics to understand why we study the subject and how current scholarship is informed by what preceded it.
		CO2 Theories provide interpretative frameworks for understanding what is happening in the world and the levels of analysis. Competing theories are presented.
	PO-C6: Public Policy	CO1 The purpose of this course is to provide students an understanding of the basic concepts, theories and process of public policy.



		CO2 The course also seeks to help students understand public policy processes and actors involved in it by studying specific policies.
M.A. Political Science	PO-O6- Human Rights	CO1 This course is aimed at introducing the basic idea of Human rights; equip the student with an ability to distinguish between human rights, fundamental rights and also between individual rights and group rights.
		CO2 The course operates at two levels: it discusses human rights in the context of global political order and secondly, discusses the implementation of human rights in the context of rights movements in India.
	PO-C7 Modern Political Thought	CO1 The purpose of this course is to introduce to the student political ideas, views and concerns of leading Indian thinkers.
		CO2 The course encourages students to understand and decipher the diverse and often contesting ways in which the ideas of nationalism, democracy and social transformation were discussed in pre- and post-independence India.
	PO-C8: Political Sociology	CO1 This Course will introduce the overall scope of the sub-discipline of political sociology. The focus of the course will be on the political sociology of power.
		CO2 State will be studied as a repository of power in society while class and patriarchy are two instances of how the nature of power is shaped by social factors.
	PO-C9 World Politics-New Developments	CO1 The objectives of this course are to introduce the students to the contemporary issues and debates in the world politics.
		CO2 The students would also be made aware of the dimensions of the making of the foreign policy as well as the role of Non- State Actors in World Politics.
	PO-O12 Research Methodology	CO 1 To introduce the concept and techniques of the students.
		CO2 To make the students aware of the different tools of research.
	PO-C10 Fundamentals of Political Theory	CO1 This course introduces the students to the evolution, importance to the study of Political Theory. It introduces Political Theory as a distinctive area of inquiry.
		CO2 It is the integral area to the study of politics. It highlights debates in the field and places them in a historical perspective.
	PO-C11 Political Process in India	CO1 The course will introduce to the student the key issues and details of the political process in post-independence India.
		CO2 It will also try to develop among students a perspective to understand and analyse Indian politics.
	PO-C12 Politics and Society	CO1 This Course expects students to understand the interface of politics with social structures and processes and how the nature of power is shaped by social factors.
	PO-O15 Election Studies	CO1 This course has a dual purpose. It seeks to introduce to the students the methods of studying elections.

#### Department of History

#### Programme: B.A. (History)

#### Programme Outcomes (POs) B.A.

PO 1		To Gain the knowledge of History, Historiography and Society through theory and field work.
PO2		To explain Human development, culture and society.
PO3		Understand the nature and basic concepts of History of Early India, Medieval India, Chh. Shivaji & His Times, Modern India. Ancient India, Medieval India.
PO4		To option of public service is always open.
PO5		History of The World In 20TH Century.
PO6		To Serve as a tourist guide in historical monuments, Tourism Expert, Archivist, Museum curator, Historian/ Researcher, Script Expert (Modi, Brahmi), Freelance writer, Media Writer, Teacher.
PO7		Introduction To History, History of Asia in 20TH Century. To analyze relationship between the past and the present is lively



		presented in the history.
PO 8		To Understand the present existing social, political, religious and economic conditions of the people.
PO 9		To develop interests in the study of history and activities relating to history. Understand the nature and basic concepts of History of Early India, Medieval India, Chh. Shivaji & His Times, Modern India
PO 10		To understands to Evaluate and recognize different Empire in Indian history. Focus on History of The World In 20TH Century. History of The World In 20TH Century. Introduction to History, History of Asia in 20TH Century.
Programme Specific Outcomes (PSOs) B. A.		
PSO1		Develop various communication skills such as reading, listing, speaking, etc., which will help in expressing ideas and views effectively.
PSO2		To gain analytical skill to analyze social issues.
PSO3		Acquire knowledge with facts and figures related to that subject.
PSO4		Grasp the importance literature in creating aesthetic, mental, moral, intellectual development of an Individual.
PSO5		Appear as a multifaceted personality who is self-dependent.
Programme Specific Outcomes (PSOs): M.A.		
PSO1		With basic knowledge of History to Serve as a tourist guide in historical monuments,
PSO2		Tourism Expert, Archivist, Museum curator, Historian/ Researcher, Script Expert (Modi, Brahmi), Freelance writer, Media Writer, Teacher.
PSO3		To understand the present existing social, political, religious and economic conditions of the people in Historical Past.
PSO4		To develop interests in the study of history and activities relating to history.
PSO5		To analyze relationship between the past and the present is lively presented in the history.
Programme Outcomes (POs): M.A.		
PO1		Grasp the importance literature in creating aesthetic, mental, moral, intellectual development of an Individual.
PO2		Acquire knowledge with facts and figures related to that subject.
PO3		To gain analytical skill to analyze social issues.
PO4		Students will be introduced to the information and importance of Historiography and also applied history.
PO5		The students will get acquainted with the Renaissance, major political, socio-religious and economic developments during the Historical past.
PO6		Analyze socio-political and economic changes during the various periods.
PO7		Analyses factors of Literature, Religion, Art and Architecture in various periods in History.
PO8		Students will develop the ability to analyze sources of the Maratha and other Empire history.
PO9		Draws comparisons between policies of different rulers.
PO10		Provides examples of sources used to study of various periods in early/Medieval/ Modern history.
Class	Course	Course outcomes (COs)
F.Y.B.A. Sem I	Early India: From Prehistory to the Age of the Course Code : 11171	CO.1. It is a base for understanding the entire Indian history.
		provocative. CO.2. The course is aimed at helping the student to understand the history of early India from the prehistoric times to the age of the Mauryas.
F.Y.B.A. Sem II	Early India: Post Mauryan Age to the Course Code : 12171	CO.1. It is a base for understanding the entire Indian history.
		provocative. CO.2. The course is aimed at helping the student to understand the history of early India from the prehistoric times to the age of the Mauryas.
	CC - History of the Marathas: (1630-1707) Course Code : 23174	CO.1. Student will develop the ability to analyse sources for Maratha History.
		CO.2. Student will learn significance of regional history and political foundation of the region.
		CO.3.It will enhance their perception of 17th century Maharashtra and India in context of Maratha history.
		CO.4.Appreciate the skills of leadership and the administrative system of the Marathas.
	DSE 1 - Medieval India - Sultanate	CO.1 Provides examples of sources used to study various periods in history.





S.Y.B.A. Sem III	Period Course Code : 23171	
		CO.2. Relates key historical developments during medieval period occurring in one place with another.
		CO.3. Analyses socio - political and economic changes during medieval period
	DSE 2 - Glimpses of the Modern World - Part I Course Code : 23172	CO.1. It will enable students to develop the overall understanding of the Modern World.
		CO.2. The students will get acquainted with the Renaissance, major political, socio-religious and economic developments during the Modern World.
		CO.3. It will enhance their perception of the history of the Modern World.
		CO.4. It will enable students to understand the significance of the intellectual, economic, political developments in the Modern World.
	DSE 2 - History of East Asia Course Code : 23173	CO.1.It will enable students to develop the overall understanding of the Asian countries.
		CO.2. The students will get acquainted with the Communism in China & Imperialism of Japan.
		CO.3. It will enhance their perception of the developmental Policies of the Asian Countries
		CO.4.It will enable students to understand the significance of the intellectual, economic, political developments in the Modern World.
	SEC - Tourism Management Course Code : 23178	CO.1.Students will get an overall understanding of the process of Tourism Management.
S.Y.B.A. Sem IV		CO.2. They will learn to work in the Tourism Management with great potential.
		CO.3. They will be able to seek self-employment by starting their own tourism related business.
	CC - History of the Marathas: (1707-1818) Course Code : 24174	CO.1. Students will be able to analyze the Marathas policy of expansionism and its consequences.
		CO.2. They will understand the role played by the Marathas in the 18th century India
		CO.3. They will be acquainted with the art of diplomacy in the Deccan region.
		CO.4. It will help to enrich the knowledge of the administrative skills and profundity of diplomacy.
	DSE 1 - Medieval India - Mughal Period Course Code : 24171	CO. 1 Provides examples of sources used to study various periods in history.
		CO.2. Relates key historical developments during medieval period occurring in one place with another.
		CO.3. Analyses socio - political and economic changes during medieval period
	DSE 2 - Glimpses of the Modern World - Part II Course Code : 24172	CO.1. It will enable students to develop the overall understanding of the Modern World.
		CO.2. The students will get acquainted with the Renaissance, major political, socio-religious and economic developments during the Modern World.
		CO.3. It will enhance their perception of the history of the Modern World.
		CO.4. It will enable students to understand the significance of the intellectual, economic, political developments in the Modern World.
	DSE 2 - History of West Asia Course Code : 24173	CO.1.It will enable students to develop the overall understanding of the Asian countries.
		CO.2. The students will get acquainted with the Communism in China & Imperialism of Japan.
		CO.3. It will enhance their perception of the developmental Policies of the Asian Countries
		CO.4.It will enable students to understand the significance of the intellectual, economic, political developments in the Modern World.
	SEC - Travel Agency and Tour Business Course Code : 24178	CO.1.The students will understand the details of the business of Travel Agency.
		CO.2. They will be trained on both Theory and Practical aspect and Travel Agency and creating professionals for Tourism Industry.
		CO.3. It will enable student to seek self-employment by starting their own Travel Agency related to business.
	HISTORY OF THE WORLD	CO.1. Enable students to understand Modern World, acquaint the student with the Socio-economic & Political Developments in other countries. And understand the contemporary world in the light of its background History.
		CO.2. Orientation of the students with political history of Modern World.
		CO.3. Knowledge about the main developments in the Contemporary World
		CO.4. Impart knowledge about world concepts.
		CO.5. Understanding of the economic transition in World during the 20th Century.
		CO.6. Become aware of the principles, forces, processes and problems of the recent times.
		CO.7. Knowledge regarding growth of various political movements that shaped the modern world.
		CO. 8. Highlighting the rise and growth of nationalism as a movement in different parts of the world.
		CO.1. Orientation of the students about how history is studied, written and understood.
		CO.2. Explanation of methods and tools of data collection.
		CO. 3. Understanding the meaning of Evolution of Historiography.





T.Y.B.A.	INTRODUCTION TO HISTORY (S-III)	CO.4. Knowledge of Various Views of Historiography.
		CO.5. Knowledge of the approaches to Historiography.
		CO.6. Knowledge of the types of Indian Historiography.
		CO.7. Ability to describe importance of inter-disciplinary research.
		CO.8. Introduction of the basics of research.
		CO.9. Knowledge of the recent research in History.
		CO.10. Learn how to use sources in their presentation.
		CO.1. Orienting the students with political history of Asia.
		CO.2. Enabling the students to understand the economic transition in Asia during 20th Centuries.
		CO.3. Understanding the important developments in the 20th century Asia in a Thematic approach.
	HISTORY OF ASIA IN 20TH	CO.4. Providing an overall view and broad perspective different movements connected with Nationalist aspirations in the region of Asia in general.
		CO.5. Empowering the students to cope with the challenges of globalization.
<b>Class</b>	<b>Course</b>	<b>Course outcomes (COs)</b>
M.A.-I	CC – 1: History: Theory and Method	CO.1. Students will be introduced to the information and importance of Historiography.
Sem-I		CO.2. Students will be introduced to the different Methods and Tools of data collection.
		CO.3. Students will be introduced to the formulating hypotheses and develop broad frames of interaction with other Social sciences and attain certain level of Interdisciplinary approach.
	Early India	CO.1. Students will be introduced to provide an understanding of the social, economic and institutional bases of early India.
		CO.2. Students will be introduced to an understanding of early Indian history is crucial to understand Indian history as a whole.
	CC– 3: Maratha Polity	CO.1. Students will be introduced to provide an understanding of the study the administrative system of the Marathas in an analytical way, to acquaint the student with the nature of Maratha Polity.
		CO.2. Students will be introduced to provide an understanding of to understand basic components of the Maratha administrative structure, to enable the student to understand the basic concepts of the Maratha polity.
	Elective Courses:	CO.1. Students will learn about the background of the Dalit movement which flourished in the twentieth century.
	EC-2 Social Background of Dalit Movement in Maharashtra	CO.2. Students will be introduced to highlights the earlier forms of protest from the ancient till the medieval period, which laid the foundations for social protest and dissent in the pre- Ambedkar period
M.A-I	CC - 4: Approaches to History	CO.1. Students can study the interdisciplinary approach of History.
Sem-II		CO.2. Students will learn about the usefulness of History in the 21st century, its changing perspectives, the new ideas that have been invented, and the importance of History in a competitive World.
		CO.3. This curriculum develops Research ability and process of Research methodology in History
	CC - 5: Ideas and Institutions in Medieval India	CO.1. Students will be introduced to provide an understanding of the social, economic and institutional bases of medieval India.
	CC - 6: Socio-Economic History of the Marathas (22203)	CO.1. Students will be introduced to the study socio-economic history of the Marathas in an analytical way, to acquaint the student with the components of social structure and their functions.
		CO.2. Students will learn about the relationship between religion, caste, customs, traditions, class in 17th and 18th century Maratha Society.
		CO.3. Students will be understanding aspects of economic life, to trace the determinants of changes in social and economic life in the history of the Marathas
	Elective Courses:	CO.1. Students will learn about the ideology and organization of the Dalit Movement in Maharashtra. Dr. Babasaheb Ambedkar led the Dalit Movement and achieved many kinds of justices to Dalits. He had to fight against inequality and atrocities imposed due to socioeconomic and political structure of Hindu society. He had to fight on various fields at the same time such as political, social, economic, religious etc.
	EC - 10: Nature of Dalit Movement in Maharashtra	CO.2. Students will be introduced to the attempt here is to help students to understand the details of the most important and neglected socio-religious reform movement in Maharashtra with its root causes.
		CO.3. The paper attempts to help students to understand the ideology of Dr. Babasaheb Ambedkar who was the unchallenged leader of the Dalit Movement.



M.A.-II	CC - 7: Cultural History of Maharashtra (32201)	CO.1. Students will be introduced to the student situate and interpret the cultural manifestations across historical memory which have contributed to the creation of the geopolitical region of Maharashtra
Sem-III		CO.2. Students will be able to analyze the Marathas policy of expansionism and its consequences.
		CO.3. They will understand the role played by the Marathas in the 17 <sup>th</sup> and 18 <sup>th</sup> century India.
		CO.4. They will be acquainted with the art of diplomacy in the Deccan region.
		CO.5. It will help to enrich the knowledge of the administrative skills and profundity of diplomacy.
	CC - 8: Intellectual History of the Modern World	CO.1. It will enable students to develop the overall understanding of the Modern World.
		CO.2. The students will get acquainted with the Renaissance, major political, socio-religious and economic developments during the Modern World.
		CO.3. It will enhance their perception of the history of the Modern World.
		CO.4. It will enable students to understand the significance of the intellectual, economic, political developments in the Modern World.
		CO.1. Students will learn about the structural and conceptual changes in Indian economy after coming of the British.
	CC - 9: Economic History of Modern India	CO.2. Students will be introduced to the aware of the exploitative nature of the British rule, to help them understand the process of internalization by Indians of new economic ideas, principles and practices.
	Elective courses	CO.1. This course attempts to study various approaches to peasant revolts and movements
	EC - 19: Peasant Movements in India (Medieval and Modern)	CO.2. This Course helps the student to understand characteristics of peasant movements.
M.A.-II	(1818-1960)	CO.1. Student will develop the ability to analyze sources for 19 <sup>th</sup> century Maharashtra History.
Sem-IV		CO.2. Student will learn significance of Regional History and Socio- religious reformism foundation of the region.
		CO.3. It will enhance their perception of 19 <sup>th</sup> Century Maharashtra.
		CO.4. Appreciate the skills of leadership and the Socio-religious System of the Maharashtra.
	CC - 11: Debates in Indian Historiography	CO.1. Students will learn about some of the issues that have been debated in Indian Historiography by historians.
		CO.2. Students will be introduced to some perspectives with reference to Indian History.
	CC - 12: World after World War II (1945-2000)	CO.1. To acquaint the student with the post-World War II scenario.
		CO.2. Students will be introduced to understand contemporary world after World War II from the historical perspective.
	Elective Courses	CO.1. The paper intends to make an in-depth study of various aspects of British administrative policies in India.
	EC - 27: British administrative policies in India 1765- 1892	CO.2. Students will be introduced to the various British Acts, administrative system during 19 <sup>th</sup> century in India.
<b>Department Of Geography</b>		
<b>Programme Outcomes (POs) B. A.</b>		
PO1		The geographical maturity of students in their current and future courses shall develop.
PO2		The student develops theoretical, applied and computational skills.
PO3		They discuss the utility and application of Physical geography in different regions and environment.
PO4		Students demonstrate applications of Human Geography in different regions of environment.
PO5		Students are aware about problems and prospects of Maharashtra and understand the relationship between geographic variations and society in Maharashtra.
PO6		Students integrate the various factors of economic development and to acquainted the students with this dynamic aspect of economic geography Students able to develop and use of survey and mapping skills. Aware of the new techniques, accuracy and map making skills.
PO7		Gain knowledge about the various projections and know about sources and types of data.
PO8		Introduce the students with SOI Toposheets, Aerial, Photographs and Satellite Images acquire the Knowledge of Toposheet, Aerial, Photographs and Satellite Images and acquire knowledge to interpret it.
PO9		create confidence in others, for equipping themselves with that part of Geography which is needed for various branches of Sciences or Humanities in which they have aptitude for higher studies and original work.
PO10		To make aware the students about the problems of environment, their utilization and conservation in the view of sustainable development



<b>Programme Specific Outcomes (PSOs) B. A.</b>		
PSO1		To introduce the students to the basic concepts in Physical geography.
PSO2		To introduce latest concept in Physical geography
PSO3		To acquaint the students with the utility and application of Physical geography in different regions and environment.
PSO4		To make the students aware about Earth system.
PSO5		To create the awareness about dynamic environment among the student.
PSO6		To acquaint the students with fundamental concepts of environment
PSO7		geography for development in different areas.
PSO8		The students should be able to integrate various factors of Environment and dynamic aspect of Environmental geography.
PSO9		To make aware the students about the problems of environment, their utilization and conservation in the view of sustainable development
<b>Programme Outcomes (POs) M. A.</b>		
PO1		Will get knowledge of geographical terms, concepts, and theories and will be able to explain and find out the relation between geographical factors and processes.
PO2		Will be able to understand and apply to collect geographical data through qualitative and quantitative techniques and will be able to analyze the data related to physical and le to develop and prepare various thematic maps and map reading skills
PO3		Will be able to communicate the results of the research in written form and oral communication
PO4		Will be able to understand and relate how their life is related to different geographical factors such as environmental, economic, social, and cultural at the local and global scale. He/she will be able to evaluate factors such as environmental, economic, social, and cultural, with respect to spatial dimensions from a local to global scale
PO5		Will learn and think in spatial dimensions and will be able to find out the temporal change which took place over the period of time. S/he will be able to understand the present and extrapolate for the future.
PO6		Will be able to understand different concepts of sustainability, sustainable development goals, and how a man can use the physical environment for the benefit of human societies, and in the achievement of SDGs and MDGs
PO7		Will acquire skills in interpretation of thematic maps through visual and/or digital interpretation of topographic maps, weather maps, aerial photographs, and satellite images.
PO8		Will be able to apply knowledge of remote sensing concepts, and techniques in various fields of earth and environment sciences
PO9		Will be able to present the completed research through cartographic tools and other visual formats, with an explanation of research methodology, and carry out scholarly discussions.
PO10		She/he will be able to develop a research design including hypotheses, and research questions and also will be able to do a critical analysis of both qualitative and quantitative data to find out the answers using various theoretical and methodological approaches in both physical and human geographies
PO11		Will be able to understand the geographical distribution of the global human population and factors affecting human populations including human settlement and economic activities and transport networks. The students will be able to understand the impacts of human activities on the physical environment.
<b>Programme Specific Outcomes (PSOs) M. A.</b>		
PSO1		To maintain updated curriculum.
PSO2		To take care of fast development in the knowledge of Geography.
PSO3		To enhance the quality and standards of Geography Education.
PSO4		To provide a broad common frame work, for exchange, mobility and free dialogue across the Indian Geography and associated



		community.
PSO5		To create and aptitude for Geography in those students who show a promise for higher studies and creative work in Geography.
PSO6		To create confidence in others, for equipping themselves with that part of Geography which is needed for various branches of Sciences or Humanities in which they have aptitude for higher studies and original work.
<b>Course Outcomes (COs)</b>		
	Gg.110 (A)Physical Geography	CO1 To recognize the basic concepts in Physical geography. CO2 To discuss the utility and application of Physical geography in different regions and environment.
		CO3 To acquaint with Earth system (Lithosphere, Atmosphere, Biosphere and Hydrosphere). CO4 To identify the principles and applications of Hydrology and Oceanography to address water resource and environment related problems.
	Gg.110 (B) Human Geography	CO1 To describe the basic and latest concepts in Human Geography. CO2 To demonstrate applications of Human Geography in different regions of environment. CO3 To define the Settlement pattern and rural and urban settlement. CO4 To describe the Agriculture types and pattern.
S.Y.B.A. Sem III	G-2 Gg-210 Geography of Disaster Management	CO.1 Introduction to the basic concepts in disaster management system and classification of disasters. CO.2 Study of various components of disaster management such as Preparedness, Response, Recovery, Mitigation and Rehabilitation. CO.3 Study of causes and consequences of various climatic, geological, geomorphic and atmospheric disasters. CO.4 Introduction to the global issues with causative and controlling factors of these issues.
S.Y.B.A. Sem III	Gg: 220 (A) S1 DSE 1 A Geography of Maharashtra - I	CO1 Learn the geography of Maharashtra state. CO2 Aware about problems and prospects of Maharashtra. CO3 Understand the relationship between geographic variations and society in Maharashtra. CO4 Learn the recent trends in regional studies. OR
S.Y.B.A. Sem IV	G-2 Gg-210 Element of Climatology and Oceanography	CO1. Knowledge of the basic principles and concepts in Climatology and Oceanography. CO.2.Knowledge of the applications of Climatology and Oceanography in different areas and environment. CO.3. Awareness of the Planet Earth and thereby to enrich the students knowledge.
S.Y.B.A. Sem IV	Gg: 220(B) S1 DSE 1 B Geography of Maharashtra -II	CO1 Aware about the problems and prospects of agriculture in Maharashtra. CO2 Learn the distribution of population and patterns of settlements in Maharashtra. CO3 Learn the concepts in rural development. CO4 Understand the prospectus of tourism activities in Maharashtra with role of MTDC in development. CO5 Understand the role of MIDC in industrial development in rural Maharashtra.
Sem IV	Gg: 201(B)DSE 2 B Practical Geography -II (Cartographic Techniques, Surveying and Excursion / Village / Project Report)	CO1 Learn the basic concepts in practical geography. CO2 Able to develop and use of survey and mapping skills. CO3 Aware of the new techniques, accuracy and map making skills.
Sem III	G2Gg: 210 (A) CC1C Economic Geography	CO.1 Introduction of the basic principles and concepts in Economic Geography CO2 Knowledge of the applications of Economic Geography in different areas and development. CO3 Integration of the various factors of economic development and to acquaint the students about this dynamic aspect of economic geography.
		CO.1. Acquainted students with the basic principles and concepts of economic geography



S.Y.B.A. Sem IV	G2Gg: 210 (B) CC1D Economic Geography	CO.2. Acquainted the students with the applications to economic geography for development in different areas. CO.3. Students integrate the various factors of economic development and to acquainted the students with this dynamic aspect of economic geog.
S.Y.B.A. Sem IV	S-1 Gg-220 Tourism Geography	OR CO.1. Introduction about the basic principles and concepts in Economic Geography CO.2. Knowledge and the applications of Economic Geography in different areas and development.
		CO.3. Integration of the various factors of economic development and to acquaint the students about this dynamic aspect of economic geography.
S.Y.B.A. Sem IV	S-2 Gg-201 Fundamentals of Geographical Analysis	CO.1. Enabling the students to use various Projections and Cartographic Techniques. CO.2. Knowledge of basic of Statistical data. CO.3. Knowledge and principles of surveying, its importance and utility in the geographical study.
T.Y.B.A. (Annual)	G-3. Gg-310 Regional Geography of India	CO.1. Knowledge of geography of our Nation. CO.2. Awareness of the magnitude of problems and Prospects at National level. CO.3. Understanding of the inter relationship between the subject and the society. CO.4. Understanding of the recent trends in regional studies.
		OR
	G-3. Gg-310 Human Geography	CO.1. This course is to acquaint the students with the nature of man-environment relationship and human capability. CO.2. Adoption and modification of the environment under its varied conditions from primitive CO.3. Identification and understanding environment and population in terms of their quality and spatial distribution pattern. CO.4. Comprehension of the contemporary issues facing the global community.
	S-3 Gg-320 Agricultural Geography	CO.1. Introduction of the Agricultural activities and its relation with Geography. CO.2. Familiarization with new modern technical methods and their applications in Agricultural activities. CO.3. Enabling the students to apply Previously knowledge in Problems and Prospects in agriculture
	S-4 Gg-301 Techniques of Spatial Analysis	CO.1 Study of SOI toposheets with proper interpretation of the physical and cultural landscapes and landforms over the hilly, plateau and plain regions. CO.2 Introduction to the weather charts of India Meteorology Department (IMD) including interpretation of various weather conditions during the summer, winter and monsoon seasons over India. CO.3 Brief study on applications of aerial photographs and satellite images in geography research
F. Y. B Sc paper I (Geo)	Geomorphology	CO1 Student understand the physical geography and its branches CO2 Students understand the interior of the earth, origin of continents and ocean basins CO3 Student understand the crustal movement and internal movement of earth.
F. Y. B Sc paper II (Geo)	Climatology and oceanography	CO1 Students introduced by climatology basic principles, concepts, nature, scope and importance CO2 Students understand the composition and structure of the atmosphere. CO3 Students were learnt the isolations and temperature of the atmosphere.
F. Y. B Sc paper III	Techniques in physical geography	CO1 Student introduced about maps and scales and types conversion of scale. CO2 Student learnt the methods of relief representations CO3 Student got knowledge about SOI toposheet and draw profiles.



S Y B Sc Paper I	Geography of resources	CO1 Student acquainted the fundamental concepts of resources and classified the resources. CO2 Student learnt about human resources.
		CO3 Students aware the relationship between resources and development and planning of resources.
S Y B Sc Paper II(Sem-I)	Watershed Management I	CO1 Student understood the concepts in the watershed management. CO2 Characteristics of watershed, introduced geo-morphological characteristics CO3 Introduced hydrological process in watershed
S Y B Sc Paper I	Watershed Management I	CO1 Students understood about resource appraisal of watershed methods CO2 Student introduced to watershed planning – importance CO3 Student understood about water and soil conservation methods
S Y B Sc Paper III	Fundamentals of geographical analysis	CO1 Student knows about how to present data and analysis CO2 They also know about map, types of map and projections CO3 Students know the types of serving
T .Y .BSc. Sem III	Fundamentals of Human Geography (Part I)	CO1 To acquaints the students with theoretical concepts of Human Geography and models. CO2 To familiarize the students with Environmental issues related with population growth and Human development index
	Geography of Travel and Tourism (Part I)	CO1 To acquaint the students with Concepts in tourism. CO2 To make the students aware of the tourism potential of the area.
	Fundamentals of Geo-informatics (Part I)	CO1 To acquaint the students with new concepts and approaches in Geography CO2 To familiarize the students with the wide application fields in Geography
	Geography of India (Part I)	CO1 To acquaint the students with geography of India. CO2 To make the student aware of the magnitude of problems and Prospects at National level. CO3 To help the students to understand the inter relationship between the subject and the society.
	Geography of Soils (Part I)	CO1 To acquaint the students with concepts in Soil Science. CO2 To familiarize the students with the importance of soil science in Geography.
	Fundamentals of Geo-informatics (Part I)	CO1 The objectives of this course are to acquaint the students with the nature of man environment relationship and human capability to adopt and modify the environment under its varied conditions from primitive life style to the modern living. CO2 To identify and understand environment and population in terms of their quality and spatial distribution pattern and to comprehend the contemporary issues facing the global community.
	Fundamentals of Human Geography (Part II)	CO1 To acquaints the students with theoretical concepts of Human Geography and models. CO2To familiarize the students with Environmental issues related with population growth and Human development index





	Geography of Travel and Tourism (Part II)	CO1 To acquaint the students with Concepts in tourism
		CO2 To make the students aware of the tourism potential of the area.
T. Y. B.Sc. Sem IV	Fundamentals of Geo-informatics (Part II)	CO1 To acquaint the students with new concepts and approaches in Geography CO2 To familiarize the students with the wide application fields in Geography
	Geography of India (Part II)	CO1 To acquaint the students with geography of India. CO2 To make the student aware of the magnitude of problems and Prospects at National level. CO3 To help the students to understand the inter relationship between the subject and the society.
	Geography of Soils (Part II)	CO1 To acquaint the students with concepts in Soil Science. CO2 To familiarize the students with the importance of soil science in Geography.
	Fundamentals of Geo-informatics (Part II)	CO1 To acquaint the students with new concepts and approaches in Geography CO2 To familiarize the students with the wide application fields in Geography
T. Y. B.Sc. Practical Annual	Map Analysis and Field Work (Practical I)	CO1 To acquaint the students with new concepts and approaches in Geography CO2 To familiarize the students with the wide application fields in Geography
	Techniques of Spatial Analysis (Practical II)	CO1 To introduce some basic statistical procedures to the students to be applied to various themes in geography CO2 To indicate the assumptions, limitations and interpretation of these procedures and results, problems.
	Techniques in Geomorphology and Soil Analysis (Practical III)	CO1 To acquaint the students with various techniques in geomorphic analysis. CO2 To familiarize the students with the basic methods of soil analysis.
M.A –I Sem-I	Principles of geomorphology	CO1 Student understood the history of geomorphology and studies geological time scale. CO2 Student understood the interior of the earth with various sources and theories like Isostasy. CO3 Student able to define weathers of mass movements in nature.
		CO1 Student know the difference between geodetic and plane survey. CO2 Students learnt terms used in leveling like spot height. CO3 Student able to identified the parts of dumpy levels.
		CO1 Student learnt the nature, scope, sub-divisional development. CO2 Student understands the atmospheric Composition and structure. CO3 Student were aware the atmospheric motion.
M.A –I Sem-I	Principles of climatology	CO1 Understood nature and scope of economic geography. CO2 Student understood formation and testing of hypothesis. CO3 Students understood various types of economics such as homestead and tribal.
M.A –I Sem-I	Principles of population.	CO1 Student understood the evaluation of settlement and population geography. CO2 Student learnt various factors influencing the growth and distribution.
M.A. _I(Sem-I)	Practices in Physical Geography	CO1 Student learn the drainage network and drainage stream. CO2 Students understood few climatic elements. CO3 Student understand the few climatic classification schemes.
M.A. _I(Sem-I)	Particles in human geography	CO1 Student learn the crop combination method by weavers. CO2 Student acquired the knowledge measure the network indices & Ratio measure CO3 Student aware the method of calculations of urban data.
(Sem-II)	Quantitative techniques in geography	CO1 Students introduced about geographical data. CO2 Student understood the analytical methods of descriptive statistics. CO3 Student learnt concept of probability and methods of determination.
(Sem-II)	Particles in cartography	CO1 Student learnt the data representation by various techniques and data measurement. CO2 Student aware about the plotting the semi log on X & Y with whisker. CO3 Student leant fundamental concepts of Math projection definition.

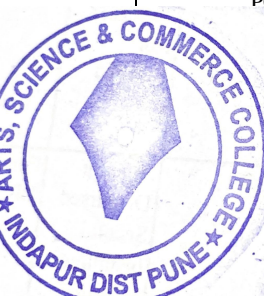




M.A._I(Sem-II)	Geography of tourism	CO1 Student learnt the basic concept of tourism geography.
		CO2 Student learnt the types of tourism & Adventure of Tourism.
		CO3 Student learnt impact of tourism physical economic and social tourism.
M.A._I(Sem-II)	Geography of Disaster management	CO1 Students introduced the concept and definition of disaster.
		CO2 Student understood the classification of disasters.
		CO3 Student understood the impact of disaster.
M.A._I(Sem-II)	Geo -informatics -I	CO1 Student learnt basic of GIS history of GIS & element of GIS.
		CO2 Student understood special relationships, functional relationships and logical relationships.
		CO3 Student studied geometric primitive's raster, vector, quad tree. Etc.
M.A._I(Sem-II)	Geo-informatics-II	CO1 Student learnt field work and survey published data and reports.
		CO2 Student studied the principles of remote sensing.
		CO3 Student understood atmosphere and surface.
M.A._I(Sem-II)	Population geography	CO1 Student learnt the nature and scope of population geography.
		CO2 Student studies various factors of affecting growth on population theories.
		CO3 Student learnt various factors affecting on distributions of world population.
M.A._I(Sem-II)	Geography of rural settlement	CO1 Students studied evaluation of settlement.
		CO2 Student understood various factors of affecting site of distribution and growth of settlement
		CO3 Student learnt various rural services.
M.A._I(Sem-II)	Geography of India with special references of Maharashtra.	CO1 Student introduced about geography of India and Maharashtra.
		CO2 student learnt the physiography of India And Maharashtra.
		CO3 student aware of climate of India and Maharashtra.
M.A-II Sem-III	Interpretation of topographical maps and village survey.	CO1 Student learnt Interpretation of topographical maps and village survey.
		CO2 Student understood the location of village extension and physical future
		CO3 Students understood how to fill the questionnaire in the village survey
M.A-II Sem-III	Research method in geography	CO1 Student introduced about surveying and map projections.
		CO2 Student learnt about the creation of database of physical and cultural features.
		CO3 Student understood geometry of aerial photographs and database creations.
M.A-II Sem-III	Social and cultural geography	CO1 Student understand the nature and scope, definition of social and cultural geography
		CO2 Student aware the basic concept of materialism and discussion of culture.
		CO3 student understand social wellbeing quality of life and human development.
M.A-II Sem-III	Practical of watershed analysis	CO1 Student learnt delineate the water shed from toposheet.
		CO2 Student calculated the basin perimeter, shape and area.
		CO3 Student calculated linear aspects of drainage basin.
M.A-II Sem.-III	Urban Geography	CO1 Student understand the nature and scope and definition of urban geography.
		CO2 Student understood the few theories of urban geography like center place
		CO3 Student understand the concept of urbanization and urban demography.
M.A-II Sem.-III	Political Geography	CO1 Student learnt nature and scope of political geography.
		CO2 Student studied various approach to study of political geography.
		CO3 Student understand the concept of nation, state and nation building. .
I Sem-III	Practical in population and settlement geography	CO1 Student learnt various demography Indices such as mortality.
V Sem-IV	Theoretical and applied geography	CO2 student understood demographic transactions applied to Maharashtra.
		CO3 Student studied the various indices related settlement geography.
		CO1 Student learnt different Geographers such as Greek, Roman & Indian.
V Sem-IV	Principles of remote sensing	CO2 Student understand the paradigms, systems and models and types.
		CO3 Student understood from this topic field survey.
		CO1 Student understood definition, history and principles of development.
V Sem-IV	Principles of remote sensing	CO2 Student understood concept of radiation principles.
		CO3 Student understood platforms types of their characteristics.



Sem-IV Sem-IV	Practical in remote sensing & GIS	CO1 Student understand the basic concept of remote sensing & GIS.
		CO2Student understand principle point, fluidical marks
		CO3 Student prepare the packet and mirror stereoscope to interpretation of aerial photograph.
Sem-IV Sem-IV	Geography of food security	CO1 Student learnt the economic growth factors affecting food security.
		CO2 Student acquired the knowledge of food justice.
		CO3 Student learnt food security bill 2013
Sem-IV Sem-IV	Geography of health	CO1 Student understand the definition and development & achievement of health geography.
		CO2Student understand the geographical factor attending human health
		CO3 Student understood the health care system in India.
Sem-IV Sem-IV	Regional geography of SAARC countries	CO1 Student introduced about history of SAARC organization.
		CO2 Student understood geography of India.
		CO3 Student learnt geography of Pakistan & Bangladesh.
Sem-IV Sem-IV	Natural and manmade Hazards	CO1 Student introduced about natural hazards and disasters.
		CO2 Students understood climatic hazards, storms, drought and floods.
		CO3 Student learnt geological hazards.
Sem-IV Sem-IV	Principles of regional geography & project work	CO1 Student understood the concept of regional geography, regionalization and planning.
		CO2 Student understood central place theory and growth pole
		CO3 Students worked on various projects and presented.
		CO3. Know the reagents that causes selective and complete reduction
		CO4. Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
		CO5. Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations
		such as orbital hybridization, hyperconjugation, and resonance stabilization.
		CO6. Describe stereochemical problems in relation to chemical transformations.
		CO7. Correlate the chemical structure of biomolecules to reactivity: Functional groups, acid-base properties, Biochemical as well as synthetic routes.
		CO8. Describe different approaches to the formation of carbanions; discuss their structures, Stabilities/reactivates and applications in synthesis.
		CO9. Student should be able to plan syntheses using carbanions as nucleophilic
		CO10. Explain the origins of the observed Dia stereoselectivity.
Department of Psychology		
Programme Outcomes (POs)		
PO 1		Understand basic concepts, principles and theories of Psychology.
PO 2		Accomplish to understand the basic steps in scientific research and psychology.
PO 3		Understand recent clarification, the causes, symptoms and treatment of various psychological disorders.
PO 4		Knowledge of psychological testing, its administration, scoring and interpretation.
PO 5		Undertake an independent small-scale research projects or projects related with social works.
PO 6		Understand the basic concepts of psychology for example learning, personality, motivation, memory, IQ, EQ etc.
PO 7		Understand the application of psychological concepts in day-to-day life
PO 8		Understand the behavior of surrounding people.
PO 9		Undertake an independent small-scale research projects or projects related with social works.
PO 10		Understand the importance society socialization process
Programme Specific Outcomes (PSOs)		
PO 1		Understand the biological cognitive and social emotional process.
PO 2		Understand the importance of heredity and environment in human development.
PO 3		Understand the importance of motivation emotions in human life.



PSO 4		Understand the various theories of personality.
PSO 5		Understand the behavior of surrounding people.
<b>Class</b>	<b>Course</b>	<b>Course outcome (COs)</b>
F.Y.B. A	Foundation of Psychology	CO.1. Understand the basic psychological processes and their applications in day-to-day life.
Semester		CO.2.Develop the ability to evaluate cognitive processes, learning and memory of an individual.
		CO.3.Understand the importance of motivation and emotion of the individual.
		CO.4.Understand the personality and intelligence of the individuals by developing their psychological processes and abstract potentials
	Introduction to Social Psychology	CO.1. Understand the basics of social psychology.
		CO.2.Understand the nature of self, concept of attitude and prejudice of the individual.
		CO.3. Assess the interactional processes, love and aggression in our day today life.
		CO.4.Understand group dynamics and individual in the social world.
F.Y.B.Sc	Foundations of Psychology	CO.1.Understand the basic psychological processes and their applications in day-to-day life.
Semester		CO.2.Develop the ability to evaluate cognitive processes, learning and memory of an individual.
		CO.3.Understand the importance of motivation and emotion of the individual.
		CO.4.Understand the personality and intelligence of the individuals by developing their psychological processes and abstract potentials.
	Experimental Psychology	CO.1.Understand basic concepts of Experimental Psychology.
		CO.2.Understand the different methods of psychophysics, learning, reaction time.
		CO.3.Understand psychological tests, intelligence, aptitude and personality.
	Psychology Practical: Experiments	CO.1.To acquaint the students the basic concepts of Experiments in Psychology.
	Introduction to Social Psychology	CO.1. Understand the basics of social psychology.
		CO.2.Understand the nature of self, concept of attitude and prejudice of the individual.
		CO.3.Assess the interactional processes, love and aggression in our day today life.
		CO.4.Understand group dynamics and individual in the social world.
	Psychological Testing	CO.1.Understand the basics of psychological testing.
		CO.2.Understand and assessing the human abilities.
		CO.3. Understand and evaluate behavior analysis.
	Psychology Practical: Test	CO.1.To acquaint the students the basic concepts of Tests in Psychology.
		CO.2.To acquaint the students how to administer the tests and to understand its practical applications
		CO.3.To introduce the students about basic knowledge of elementary statistics
SYBA	Psychology of Abnormal Behavior-I	CO.1. Acquire the knowledge about the symptoms, diagnostic criteria, and causes of various psychological disorders.
Semester		CO.2.Examine multiple probable causes and correlates of behaviour.
		CO.3.Understand critiques, limitations, and implications of diagnosis and classification of psychological diseases.
		CO.4.Create awareness about mental health problems in society.
	Developmental Psychology	CO.1.Understand the importance, characteristics and concern in lifespan development.
		CO.2.Understand biological, cognitive, and socio-emotional processes.
		CO.3.Understand the periods of development, the significance of age, and discuss developmental issues.
		CO.4.Understand Psychoanalytic, Cognitive, Behavioural and Social Cognitive, Ethological, Ecological and Eclectic theories of development.
		CO.5.Understand methods of data collection and research designs used in Life-span development research.
	Health Psychology	CO.1.Understand health psychology and arrive at the introduction to the role of psychology in health.
		CO.2. Understand the nature of stress and coping.
		CO.3.Understand various factors related to health and diseases.
		CO.4.Understand quality of life and promoting the good health.
	Skill Enhancement Courses	second year onwards.
		CO.1.It is mandatory for the student to complete one Skill Enhancement Course (SEC) in each semester from Semester III to Semester VI.
		CO.2.Skill Enhancement Course (SEC) will have two (2) credits only.
	Psychology of Abnormal Behavior-II	CO.1.Learn descriptions, and theories underlying diagnostic nosology of psychiatric disorders.
		CO.2.Learn and understand benefits, critiques, limitations, and implications of diagnosis and classification.
		CO.3.Help students to acquire the knowledge about the symptoms, diagnostic criteria, and causes of various psychological disorders.
		CO.4.Examine multiple probable causes and correlates of behavior.



		CO.5. Create awareness about mental health problems in society.
	Theories of Personality	CO.1.Understand the concept of personality with various theories of personality on the basis of personality psychology.
		CO.2.Understand different framework and theoretical aspects of personality.
		CO.3.Understand and observe, interpret individual differences in behavior in the light of sound theoretical systems of personality.
		CO.4.Understand comprehensive overview of the major theories personality.
	Positive Psychology	CO.1.Understand how the positive psychology as the science of happiness, human strengths, positive aspects of human behavior and 'psychology of well-being.
		CO.2.How we lead our lives, find happiness and satisfaction, and face life's challenges.
		CO.3.How positive psychology has become an evolving mosaic of research and theory from many different areas of psychology.
		CO.4.It is mandatory for the student to complete one Skill Enhancement Course (SEC) in each semester from Semester III to Semester VI.
		CO.5.Skill Enhancement Course (SEC) will have two (2) credits only.
TYBA	Industrial and Organizational Psychology	CO.1.The emergence of Industrial and Organizational Psychology
(Annual)		CO.2.The work done in Industrial and Organizational Psychology
		CO.3.The significance of training, performance appraisal, leadership models
		CO.4.The importance of Engineering Psychology
	Scientific Research and Experimental Psychology	CO.1.To acquaint the students with the basic concepts of experimental psychology and research methodology
		CO.2.To develop the spirit of scientific inquiry in the students,
		CO.3.To help them generate ideas for research, as well as develop hypotheses and operational definitions for variable.
		CO.4.To help students understand the basic steps in scientific research.
		CO.5.To equip the students with the basic information and knowledge about test-administration and scoring, and interpretation of the obtained results
		CO.6.To enable the students to undertake an independent small-scale research project.
	Psychology Practical: Test and Experiments	CO.1.To familiarize the students with the use of elementary statistical techniques
		CO.2.To give practical experience to the students in administering and scoring psychological tests and interpreting the scores
		CO.3. To acquaint the students with the basic procedure and design of psychology experiments
		CO.4.To encourage and guide the students to undertake a small-scale research project
		CO.5.To encourage students to learn practical application through study tour and visit.
<b>Department of Economics</b>		
<b>Programme Outcomes (POs) for B. A. Economics</b>		
PO 1		To relate and recognize the concept and indicators of Economic Development.
PO 2		To describe and analyze the concept and indicators of Human Development.
PO 3		To explain the characteristics of Developing and Developed Countries.
PO 4		To describe the constraints to the process of Economic Development.
PO 5		To describe and explain the process of Economic Planning.
PO 6		To describe and examine the changing structure of planning process in India.
PO 7		To describe and explain the relation between Economic Development and Environment.
PO 8		To provide the students with the background of the Indian Economy with focus on contemporary issues like economic environment.
PO 9		At the end of the course, the student should be able discuss and debate on the various issues and challenges facing the Indian Economic Environment.
10		Ability to develop awareness on the various new developments in the different sectors of an economy – agriculture, industry, services, banking, etc.
<b>Programme Specific Outcomes (PSOs) for B. A. Economics</b>		
PO 1		Ability to develop an understanding of the economic environment and the factors affecting economic environment.
PO 2		At the end of the course, the student should be able discuss and debate on the various issues and challenges facing the Indian Economic Environment.
PO 3		To help the students to prepare for varied competitive examinations



PSO 4		Making students financially literate.
PSO 5		Students understand the financial environment of the family
<b>Programme Outcomes (POs) for M. A. Economics</b>		
PO 1		Ability to apply the concepts of micro economics such as demand, supply, revenue, cost, elasticity, etc.
PO 2		To develop an understanding of the changing role of the government and the fiscal functions of the modern governments.
PO 3		Ability to appraise and assess the theory of public economics in real life situations.
PO 4		Ability to understand the concepts of international economics such as comparative cost, terms of trade, trade policies and trade agreements
PO 5		Ability to interpret and apply theory relating to understand international trade
PO 6		Ability to analyze and evaluate the subject with reference to various aspects of agrarian economies.
PO 7		Ability to develop an understanding of agriculture with its intricacies and imperfections and to be able to construct intellectual dialogue on the challenges of agriculture
PO 8		To provide the students with the background of the Indian Economy with focus on contemporary issues like economic environment.
PO 9		At the end of the course, the student should be able discuss and debate on the various issues and challenges facing the Indian Economic Environment.
PO 10		Ability to develop awareness on the various new developments in the different sectors of an economy – agriculture, industry, services, banking, etc.
<b>Programme Specific Outcomes (PSOs) for M. A. Economics</b>		
PSO 1		To promote the student for skill -based Business
PSO 2		At the end of the course, the student should be able discuss and debate on the various issues and challenges facing the Indian Economic Environment.
PSO 3		Ability to develop awareness on the various new developments in the different sectors of an economy – agriculture, industry, services, banking, etc.
PSO 4		Ability to develop an understanding of the rural sector with its intricacies and imperfections and to be able to construct intellectual dialogue on the challenges of agriculture w.r.t. the Indian Economy.
PSO 5		To develop the research attitude among the students
<b>Course Outcome (COs)</b>		
FYBA	Subject: - G-1 Indian Economic Environment	CO 1. Developed an understanding of the economic environment and the factors affecting economic environment.
		CO 2. Developed awareness on the various new developments in the different sectors of an economy – agriculture, industry, services, banking, etc.
		CO 3. Ability to compare and contrast Indian Economy with other world economies.
		CO 4. At the end of the course, the students are able to discuss and debate on the various issues and challenges facing the Indian Economic Environment.
S.Y.B.A. (CBCS Pattern)	Subject: -G -2 Financial System	CO 1. Understand fundamentals of modern financial system.
		CO 2. Understand the recent trends and developments in banking system.
		CO 3. Understand the role of the Reserve Bank of India in Indian financial system.
		CO 4. Provided the knowledge of various financial and non-financial institutions.
		CO 5. Provided the students the intricacies of Indian financial system for better financial decision making.
M.A.	Subject: - DES – 1 Micro Economics	CO 1 Developed an understanding about subject matter of Economics.
		CO 2 Impart knowledge of micro economics.
		CO 3 Clarified micro economic concepts
		CO 4 Analyzed and interpret charts, graphs and figures
		CO 5 Developed an understanding of basic theories of micro economics and their application.
		CO 6 demonstrated that the theories discussed in class will usually be applied to real-life situations.



		CO 7 Helped the students to prepare for varied competitive examinations
S.Y.B.A.	Subject: - DSE – II Macro Economics	CO 1. Introduced students to the historical background of the emergence of macroeconomics
		CO 2. Familiarized students with the differences between microeconomics and macroeconomics
		CO 3. Familiarized students with various concepts of national income
		CO4. Familiarized students with Keynesian macroeconomic theoretical framework of consumption and investment functions
		CO 5. Introduced students to the role of money in an economy.
		CO 6. Introduced students to the conceptual and theoretical frameworks of inflation, deflation and stagflation, Business Cycle. 13
		CO 7. Familiarized students with the conceptual and theoretical framework of business cycles
		CO 8. Introduced students to the role of monetary and fiscal policies in fulfilling the macroeconomic objectives of stability, full employment and growth.
		CO 9. Introduced students to the various instruments of monetary and fiscal policies
		CO 1 Demonstrated his/her understanding of sampling methods and the ability to use collection of data
S.Y.B.A.	Subject: - SEC - Basic Concept of Research Methodology	CO 2. Identified the appropriate sample techniques for different kinds of research questions
		CO 3. Identified the appropriate source of data in relation to the collection of research data.
		CO 4. Able to classify and present the collected data in the form of graph, bar diagram, chart etc
T.Y.B.A. (2013 Annual Pattern)	Subject: G-3 Indian Economic Development	CO 1. Related and recognized the concept and indicators of Economic Development.
		CO 2. Described and analyzed the concept and indicators of Human Development.
		CO 3. Explained the characteristics of Developing and Developed Countries.
		CO 4. Described the constraints to the process of Economic Development.
		CO 5. Described and explained the process of Economic Planning.
		CO 6. Described and examined the changing structure of planning process in India.
		CO 7. Described and explained the relation between Economic Development and Environment.
	S III International Economics-I	CO1. To relate and recall the concepts of International Economics and International Trade.
		CO2. To describe and apply the theories of international trade.
		CO3. To explain and comprehend the issues relating to Terms of trade and Balance of Payment.
	S IV Public Finance -I	CO1. To relate and recognize the Nature and Scope of Public Finance.
		CO2. To describe and analyze the concept of Public Revenue and its components.
		CO3. To explain types of Public Expenditure and reasons for rising Public Expenditure.
		CO4. To explain the types of Public Debt and its effects.
	Subject: - Micro Economic Analysis I & II	CO1 Ability to applied the concepts of micro economics such as demand, supply, revenue, cost, elasticity, etc. • Ability to analyze and demonstrate knowledge of the basic theories/laws in economics- law of demand, law of supply, production function, etc.
		CO2 At the end of the course, the students are able to evaluated microeconomic concepts, models and its use in real life situations.
		CO3 Ability to applied the concepts of micro economics such as demand, supply, revenue, cost, elasticity, etc. • Ability to compare and contrast various market structures and understand concept of equilibrium, price determination
		CO4 At the end of the course, the students are able to evaluated microeconomic concepts, models and its use in real life situations.
	Subject: - Public Economics I & II	CO1 Recognized, apply and analyze concepts and theories in public economics.
		CO2 appraised and assessed the theory of public economics in real life situations.
		CO3 Ability to understand, apply and analyze concepts-public debt, budget, fiscal policy in public economics.
		CO4 Ability to interpret the theories relating to public economics in real life situations.
		CO5 Ability to discuss and debate on the public finance and policies w.r.t. India





M.A – I ECONOMICS (CBCS Pattern)	Subject: - International Trade & International Finance	CO1 Ability to understand the concepts of international economics such as comparative cost, terms of trade, trade policies and trade agreements
		CO2 Ability to interpret and apply theory relating to understand international trade
		CO3 Ability to discuss and debate the effects of trade policy, trade agreements, exchange rate policies on the world economy/trade
		CO4 Ability to understand and interpret the concepts such as Balance of Payments, Exchange Rates, Foreign Exchange transactions, international capital flows, etc.
		CO5 Ability to critically analyze the effects of deficits, exchange risk, role of foreign capital on the world economy/trade
		CO6 Ability to discuss and debate on subjects related to international trade and finance w.r.t the Indian Economy
	Subject: - AGRICULTURAL ECONOMICS & LABOUR ECONOMICS	CO1 Ability to analyzed and evaluate the subject with reference to various aspects of agrarian economies.
		CO2 Ability to developed an understanding of agriculture with its intricacies and imperfections and to be able to construct intellectual dialogue on the challenges of agriculture.
		CO3 Ability to analyzed and evaluate the subject with reference to various aspects of Labour economics.
		CO4 Ability to develop an understanding of the labour with its intricacies and imperfections and to be able to construct intellectual dialogue on the challenges of labour w.r.t. the Indian Economy.
		CO1 Ability to analyze and demonstrate knowledge of the basic theories/laws in macroeconomics.
		CO2 At the end of the course, the student should be able to evaluate macroeconomic concepts, models and its use in real life situations.
M.A.-II ECONOMICS	Subject:- Macro Economics Analysis-I & II	CO3 Ability to analyze and demonstrate knowledge of the basic theories/laws in economics- general equilibrium psychological law of consumption, etc.
		CO4 At the end of the course, the students are able to evaluated macroeconomic concepts, models and its use in real life situations.
	Subject: - GROWTH AND DEVELOPMENT I & II	CO1 Ability to apply the concepts of economic growth and compare international comparison of economic development, etc.
		CO2 Ability to analyzed and demonstrated knowledge of the economic growth and development theories of economic growth and development
		CO3 Ability analyzed, evaluate and apply the growth and development concepts, role of human capital, etc. in real life situations
	Subject:- RESEARCH METHODOLOGY & RESEARCH PROJECT	CO1 Ability to develop demonstrated and examined topics under Economics to pursue research.
		CO2 Ability to evaluated and examined subject areas in economics and explore possibilities of research.
	Subject:- DEMOGRAPHY & ECONOMICS OF ENVIRONMENT	CO1 Ability to developed, demonstrate and examine various topics under Demography.
		CO2 Ability to evaluated and examine subject areas in economics bringing out the relation to population studies and demography.
		CO3 Ability to analyzed and evaluate the subject with reference to various aspects of the economics of environment.
		CO4 Ability to developed an understanding of the economics of environment and various analytical tools to comprehend environmental issues

#### DEPARTMENT OF HINDI

#### PROGRAMMEME OUTCOMES (POs) OF Hindi B. A.

O-1		A graduate student is expected to be capable of demonstrating comprehensive knowledge and understanding both theoretical knowledge in all disciplines of Hindi Students get acquainted with Hindi literary history writing. Students studied the authors and works of major literary trends of the ancient, devotional and ritual periods.
O-2		Students became aware of memoir literature. Students became aware of line drawing literature. Evaluative vision of students developed. The meeting minutes writing skills of the students were improved.
O-3		Students get acquainted with the nature of linguistics. Students get acquainted with the conditions of study of linguistics. Students should understand the applied aspects of linguistics. Students started understanding the usefulness of Students became aware of memoir literature.





PO-4		To introduce the students to the official Hindi used in government through technical terms and abbreviations. To acquaint the students with the method of official correspondence. To acquaint the students with various aspects of journalism to get it done.
PO-5		Of the periods in the history of Hindi literature To introduce nomenclature and background. To elaborate the importance, deliverable, earlier and later effects of the representative works and creators of Hindi literature. To introduce the development of Hindi literature and the causes of changes in literature.
PO-6:		became aware of the works of modern times. To acquaint the students with various aspects of journalism to get it done. From the writing tradition of the history of Hindi literature to make aware.
PO-7		To introduce the students to Hindi autobiography Nigha and Hindi long poem/poetic drama and their form. To introduce the students to the official Hindi used in government offices through technical terms and abbreviations. To acquaint the students with the method of official correspondence.
PO-8		From the writing tradition of the history of Hindi literature to make aware. Students gained knowledge of memorization. Students became aware of Ghazal literature. Students get acquainted with the personalities of Ghazal writers
PO-9		Students get acquainted with the conditions of study Students should understand the applied aspects of linguistics. Students started understanding the usefulness of Students became aware of memoir literature.
PO-10		Students got to know the vocabulary of Hindi. Students get acquainted with state language, national language, contact language and international language. Students got information about phonetics and semantics. Students get acquainted with the branches of linguistics.

#### Programme Specific Outcomes (PSOs) B.A.

PSO-1		To make students aware of the background of modern times. To make students aware of the characteristics of poetry of Bharatendu era and Dhivehi era. To introduce the creators and creations of modern times.
PSO-2		To make students aware of memoir literature. To make the students aware of drawing literature. To develop the vision of evaluation to the students.
PSO-3		To develop the vision of evaluation to the student. Assembly - Development of Chronicle Writing Skill Enhancement. Dialogue-writing skill vision building.
PSO-4		To introduce the nature of linguistics. To explain the scope of Linguistics to the students. To introduce the directions of study of linguistics.
PSO-5		studies to explain the applied aspect of linguistics. To explain the utility of linguistics in literary s.

#### PROGRAMMEME OUTCOMES (POs) M. A.

PO-1	Understanding and Knowledge:	Students studied the authors and works of major literary trends of the ancient, devotional and ritual periods.
PO-2	Skilled communicator	Students became aware of memoir literature. Students became aware of line drawing literature. Evaluative vision of students developed.
PO-3	Practical skills	Students should understand the applied aspects of linguistics. Students started understanding the usefulness of Students became aware of memoir literature.
PO-4	Scientific knowledge skill	To acquaint the students with the method of official correspondence. To acquaint the students with various aspects of journalism to get it done.
PO-5	Problem Analysis	To elaborate the importance, deliverable, earlier and later effects of the representative works and creators of Hindi literature.
PO-6:	Literary Ability	Students became aware of the works of modern times. To acquaint the students with various aspects of journalism to get it done. From the writing tradition of the history of Hindi literature to make aware.
PO-7	International Language	To introduce the students to the official Hindi used in government offices through technical terms and abbreviations.
PO-8	Writing Skills	From the writing tradition of the history of Hindi literature to make aware. Students gained knowledge of memorization. Students became aware of Ghazal literature. Students get acquainted with the personalities of Ghazal writers



PO-9	Ethics	started understanding the usefulness of Students became aware of memoir literature.
PO-10	Target to Specialization	Students got information about phonetics and semantics. Students get acquainted with the branches of linguistics.
<b>Programme Specific Outcomes (PSOs) M.A.</b>		
PSO-1		To make students aware of the characteristics of poetry of Bharatendu era and Dhivehi era.
PSO-2		To make the students aware of drawing literature. To develop the vision of evaluation to the students.
PSO-3		Assembly - Development of Chronicle Writing Skill Enhancement. Dialogue-writing skill vision building.
PSO-4		To explain the scope of Linguistics to the students. To introduce the directions of study of linguistics.
PSO-5		studies to explain the applied aspect of linguistics. To explain the utility of linguistics in literary s.
<b>COURSE OUTCOMES (COs)</b>		
F.Y.B. A	SEMESTER -I = VAIKALPIK PRASHANPATRA G-1 (1091A)	CO1: Students get acquainted with the background of Hindi literature. Students get acquainted with the science of phonetics.
		CO2: To develop the vision of evaluation to the student. To make students aware of memoir literature.
		CO3: Dialogue-writing skill vision building. To develop the vision of evaluation to the student.
		CO4: To introduce the creators and creations of modern times. To develop the vision of evaluation to the students.
		CO5: Students became aware of Ghazal literature. Students get acquainted with the personalities of Ghazal writers
F.Y.B. A	SEMESTER -II = VAIKALPIK PRASHAN PATRA G-1 (1092B)	CO1: Students studied the authors and works of major literary trends of the ancient, devotional and ritual periods.
		CO2: To acquaint the students with various aspects of journalism to get it done.
		CO3: Students became aware of the characteristics of poetry of Bharatendu era and Dwivedi era.
		CO4: Students studied the authors and works of major literary trends of the ancient, devotional and ritual periods.
		CO5: Writing Skill Enhancement. Dialogue-writing skill vision building. Students got information about phonetics and semantics.
S.Y.B.A SEMESTER Course	KAVYA SHASTRA (DSE-1) 23091 SEM I	
		CO1: To introduce the students to the official Hindi used in government offices through technical terms and abbreviations.
		CO2: To introduce the development of Hindi literature and the causes of changes in literature.
		CO3: To elaborate the importance, deliverable, earlier and later effects of the representative works and creators of Hindi literature.
		CO4: Of the periods in the history of Hindi literature To introduce nomenclature and background.
S.Y.B.A SEMESTER Course	SAHITYA KE BHEDA (DSE-1) 24091 SEM II	CO5: To introduce the development of Hindi literature and the causes of changes in literature.
		CO1: Students studied the authors and works of major literary trends of the ancient, devotional and ritual periods.
		CO2: To acquaint the students with various aspects of journalism to get it done.
		CO3: Students became aware of the characteristics of poetry of Bharatendu era and Dwivedi era.
S.Y.B.A SEMESTER Course	MADHYAYUGIN KAVYA TATHA UPANYAS SAHITYA (DSE-2) 23092 SEM I	CO4: Students studied the authors and works of major literary trends of the ancient, devotional and ritual periods.
		CO5: Writing Skill Enhancement. Dialogue-writing skill vision building. Students got information about phonetics and semantics.
		CO1: Writing Skill Enhancement. Dialogue-writing skill vision building. Students got information about phonetics and semantics.
		CO2: To acquaint the students with various aspects of journalism to get it done. To introduce the creators and creations of modern times.
		CO3: Students studied the authors and works of major literary trends of the ancient, devotional and ritual periods.
		CO4: Students studied the authors and works of major literary trends of the ancient, devotional and ritual periods.
		CO5: Writing Skill Enhancement. Dialogue-writing skill vision building. Students got information about phonetics and semantics.



S.Y.B.A SEMESTER Course: :	MADHYAYUGIN KAVYA TATHA NATAKA SAHITYA (DSE-2) 24092 SEM II	CO1. Students got to know the vocabulary of Hindi. Students get acquainted with state language, national language, contact language and international language.
		CO2. Students got information about phonetics and semantics. Students get acquainted with the branches of linguistics.
		CO3. Students get acquainted with the science of phonetics. Students get acquainted with the conditions of study of linguistics.
		CO4. Students get acquainted with the science of phonetics. Students get acquainted with the conditions of study of linguistics.
		CO5. Students get acquainted with state language, national language, contact language and international language.
S.Y.B.A SEMESTER Course	ADHUNIK KAVYA, KAHANI TATHA VYAVAHARIK HINDI (CC-2) (2020-21) SEM I	CO1: To introduce the students to the official Hindi used in government offices through technical terms and abbreviations.
		CO2: To introduce the development of Hindi literature and the causes of changes in literature.
		CO3: To elaborate the importance, deliverable, earlier and later effects of the representative works and creators of Hindi literature.
		CO4: Of the periods in the history of Hindi literature introduce nomenclature and background.
		CO5: To introduce the development of Hindi literature and the causes of changes in literature.
S.Y.B.A SEMESTER Course:	ADHUNIK KAVYA TATHA VYANGYA (CC-2) SEM II	CO1: Students get acquainted with Hindi literary history writing Students studied the authors and works of major literary trends of the ancient, devotional and ritual periods.
		CO2: Students became familiar with the period division and nomenclature of Hindi literary history. Students get acquainted with the background of Hindi literature.
		CO3: Students studied the characteristics of ancient, devotional and ritual literature. To make aware about the writing tradition of the history of Hindi literature.
		CO4: Of the periods in the history of Hindi literature. To introduce nomenclature and background. To elaborate the importance, deliverable, earlier and later effects of the representative works and creators of Hindi literature.
		CO5: To introduce the development of Hindi literature and the causes of changes in literature. Through the history of Hindi literature and to elaborate the relationship between era and life.
S.Y.B.A SEMESTER Course	(SEC-1) ANUVAD SWARUP EVAM VAVHAR SEM I	CO1: Students studied the authors and works of major literary trends of the ancient, devotional and ritual periods.
		CO2: To acquaint the students with various aspects of journalism to get it done.
		CO3: Students became aware of the characteristics of poetry of Bharatendu era and Dwivedi era.
		CO4: Students studied the authors and works of major literary trends of the ancient, devotional and ritual periods.
		CO5: Writing Skill Enhancement. Dialogue-writing skill vision building. Students got information about phonetics and semantics.
S.Y.B.A SEMESTER Course	(SEC-2) MADHYAM LEKHAN SEM II	CO1: Students get acquainted with the background of Hindi literature. Students get acquainted with the science of phonetics.
		CO2: To develop the vision of evaluation to the student. To make students aware of memoir literature.
		CO3: Dialogue-writing skill vision building. To develop the vision of evaluation to the student.
		CO4: To introduce the creators and creations of modern times. To develop the vision of evaluation to the students.
		CO5: Students became aware of Ghazal literature. Students get acquainted with the personalities of Ghazal writers
S.Y.B.A SEMESTER Course	(MIL-1) HINDI BHASHA SHIKASHAN (23012)	CO1: Students became aware of the background of modern times.
		CO2: Students get acquainted with the writers of modern times. Students became aware of the works of modern Tim
		CO3. To acquaint the students with the method of official correspondent.



Course	SEM I	CO4. The meeting minutes writing skills of the students were improved. Students became aware of memoir literature.
		CO5. Students get acquainted with state language, national language, contact language and international language.
S.Y.B.A SEMESTER Course:	(MIL-2) HINDI BHASHA SHIKASHAN (24012) SEM II	CO1. Dialogue writing skills and vision were developed in the students.
		CO2. To acquaint the students with various aspects of journalism to get it done from the writing tradition of the history of Hindi literature to make aware.
		CO3. Dialogue writing skills and vision were developed in the students.
		CO4. Students got information about phonetics and semantics.
		CO5: To introduce the development of Hindi literature and the causes of changes in literature.
TYBA Annual Course	HINDI SAHITYA KA ITIHAS: S3	CO1: Students get acquainted with Hindi literary history writing Students studied the authors and works of major literary trends of the ancient, devotional and ritual periods.
		CO2: Students became familiar with the period division and nomenclature of Hindi literary history. Students get acquainted with the background of Hindi literature.
		CO3: Students studied the characteristics of ancient, devotional and ritual literature. To make aware about the writing tradition of the history of Hindi literature.
		CO4: To the periods in the history of Hindi literature. To introduce nomenclature and background. To elaborate the importance, deliverable, earlier and later effects of the representative works and creators of Hindi literature.
		CO5: To introduce the development of Hindi literature and the causes of changes in literature. Through the history of Hindi literature and to elaborate the relationship between era and life.
T.Y.B.A. Annual Course:	BHASHA VIGYAN: S4	CO1. Students get acquainted with the nature of linguistic. Students get acquainted with the conditions of study of linguistics.
		CO2. Students should understand the applied aspects of linguistics. Students started understanding the usefulness of Students became aware of memoir literature.
		CO3. Students got to know the vocabulary of Hindi. Students get acquainted with state language, national language, contact language and international language.
		CO4. Students got information about phonetics and semantics. Students get acquainted with the branches of linguistics.
		CO5. Students get acquainted with the science of phonetics. Students get acquainted with the conditions of study of linguistics.
T.Y.B.A. Annual Course:	SAMANAY HINDI: G3	CO1. Students became aware of memoir literature. Students became aware of line drawing literature.
		CO2. Evaluative vision of students developed. The meeting minutes writing skills of the students were improved
		CO3. Dialogue writing skills and vision were developed in the students. To introduce the students to Hindi autobiography nigh a and Hindi long poem/poetic drama and their form.
		CO4. To introduce the students to the official Hindi used in government offices through technical terms and abbreviations. To acquaint the students with the method of official correspondence.
		CO5. To acquaint the students with various aspects of journalism to get it done from the writing tradition of the history of Hindi literature to make aware.



		<b>M.A. – HINDI</b>
FIRST SEMESTER Course: M.A. I	MADHYUGIN KAVYA	CO1: To introduce the medieval poetic trends of Hindi. To introduce the work of a particular poet on the background of medieval poetic trends. CO2: To introduce the tendencies of contemporary poetic language. To develop the ability to evaluate poetry on the basis of texts. CO3: To develop creative skills. To introduce the medieval poetic trends of Hindi. To introduce the medieval poetic trends of Hindi. CO4: To introduce the works of a particular poet on the background of medieval poetic trends. To develop creative skills. CO5: To develop the ability to evaluate poetry on the basis of 4 texts. To develop an emotional perspective. To develop creative skills.
SECOND SEMESTER Course M.A. I	KATHETAR GADYA SAHITYA	 CO1: Students get acquainted with idealistic, shadows and other poems in modern poetry. The art of poetic creativity developed among the students. CO2: Students get acquainted with idealistic, shadows and other poems in modern poetry. The art of poetic creativity developed among the students. CO3: Students became aware of poetic sensitivity and artistic study the vision of poetry appreciation developed among the students. CO4: The vision of modern poetry studies developed in the Students get acquainted with modern poetry. CO5: Students became aware of poetic sensitivity and artistic study. The vision of poetry appreciation developed among the students
FIRST SEMESTER Course	KATHA SAHITY	 CO1: Students get acquainted with the background of Hindi literature. Students get acquainted with the science of phonetics. CO2: To develop the vision of evaluation to the student. To make students aware of memoir literature. CO3: Dialogue-writing skill vision building. To develop the vision of evaluation to the student. CO4: To introduce the creators and creations of modern times. To develop the vision of evaluation to the students. CO5: Students became aware of Ghazal literature. Students get acquainted with the personalities of Ghazal writers
SECOND SEMESTER Course M.A.I	SHODH PRVIDHI	 CO1: Students became aware of the nature and different types of criticism. Literary criticism and practical review developed in the students. CO2: Students were introduced to the critical paradigms of the major critics of Hindi. Students get acquainted with the prevalence of folklore. CO3: Students got familiar with Bharatendu era criticism, Dwivedi era criticism, and A. Shukla era criticism. CO4: Students became aware of a brief history of Hindi criticism. Students became familiar with critical approach and methods. CO5: Students became aware of the socio-cultural background and major trends of the period. Students became aware of folk proverbs, idioms, proverbs, riddles aware of the collection.
3RD Course	BHARTIYA KAVYASHASTRA	 CO1: Students get acquainted with modern poetry. The vision of modern poetry studies developed in the students. CO2: The vision of poetry appreciation developed among the students. Students became aware of poetic sensitivity and artistic study. CO3: The art of poetic creativity developed among the students. Students get acquainted with idealistic, shadows and other poems in modern poetry. CO4: The art of poetic creativity developed among the students. Students get acquainted with idealistic, shadows and other poems in modern poetry. CO5: Students studied empathy and craft. Students became aware of poetic sensitivity and artistic study the vision of poetry appreciation developed among the students.



SECOND SEMESTER Course M.A. I	PASHCHATYA KAVYASHASTRA	
		CO1: Students get acquainted with idealistic, shadows and other poems in modern poetry. The art of poetic creativity developed among the students.
		CO2: Students get acquainted with idealistic, shadows and other poems in modern poetry. The art of poetic creativity developed among the students.
		CO3: Students became aware of poetic sensitivity and artistic study the vision of poetry appreciation developed among the students.
		CO4: The vision of modern poetry studies developed in the students get acquainted with modern poetry.
		CO5: Students became aware of poetic sensitivity and artistic study. The vision of poetry appreciation developed among the students.
FIRST SEMESTER Course M.A. I	NATAKKAR MOHAN RAKESH	
		CO1: Students get acquainted with the nature and importance of folklore. Students get acquainted with various types of folklore.
		CO2: Students get acquainted with the prevalence of folklore. Students get acquainted with the folk literature of Maharashtra.
		CO3: Students studied the history of folklore. Became aware of folk literature, folk songs, folk drama, folk tales
		CO4: folk language Students became aware of folk proverbs, idioms, proverbs, riddles aware of the collection. Students get acquainted with the prevalence of folklore.
		CO5: Indian Folklore Students get acquainted with the nature and importance of folklore. Students get acquainted with various types of folklore.
SECOND SEMESTER Course M.A. I	HINDI UPANYAS SAHITYA	
		CO1. Students became aware of memoir literature. Students became aware of line drawing literature.
		CO2. Evaluative vision of students developed. The meeting minutes writing skills of the students were improved
		CO3. Dialogue writing skills and vision were developed in the students. To introduce the students to Hindi autobiography nigh a and Hindi long poem/poetic drama and their form.
		CO4. To introduce the students to the official Hindi used in government offices through technical terms and abbreviations. To acquaint the students with the method of official correspondence.
		CO5. To acquaint the students with various aspects of journalism to get it done from the writing tradition of the history of Hindi literature to make aware.
THIRD SEMESTER Course M.A. II	ADHUNIK KAVYA	
		CO1: Students get acquainted with modern poetry. The vision of modern poetry studies developed in the students.
		CO2: The vision of poetry appreciation developed among the students. Students became aware of poetic sensitivity and artistic study.
		CO3: The art of poetic creativity developed among the students. Students get acquainted with idealistic, shadows and other poems in modern poetry.
		CO4: The art of poetic creativity developed among the students. Students get acquainted with idealistic, shadows and other poems in modern poetry.
		CO5: Students studied empathy and craft. Students became aware of poetic sensitivity and artistic study the vision of poetry appreciation developed among the students.
MESTER rse M.A. II	ADHUNIK KAVITA	
		CO1: Students get acquainted with idealistic, shadows and other poems in modern poetry. The art of poetic creativity developed among the students.
		CO2: Students get acquainted with idealistic, shadows and other poems in modern poetry. The art of poetic creativity developed among the students.
		CO3: Students became aware of poetic sensitivity and artistic study the vision of poetry appreciation developed among the students.
		CO4: The vision of modern poetry studies developed in the students get acquainted with modern poetry.
		CO5: Students became aware of poetic sensitivity and artistic study. The vision of poetry appreciation developed among the





		students.
THIRD SEMESTER Course M.A. II	BHASHA VIGNYAN	CO1: Linguistics students get acquainted with the nature of linguistics. Students get acquainted with the directions of study of linguistics. CO2: Students get acquainted with the applied side of linguistics. Students became familiar with the utility of linguistics in the study of literature. CO3: Students became aware of the definition, nature and scope of Linguistics. Students get acquainted with phonetics. CO4: Students became aware of the definition, nature and scope of Linguistics. Students get acquainted with phonetics. CO5: Students get acquainted with phonetics. Students became aware of Morphology. Students get acquainted with syntax.
		CO1: Indian Folklore Students get acquainted with the nature and importance of folklore. Students get acquainted with various types of folklore. CO2: Students get acquainted with the prevalence of folklore Students get acquainted with the folk literature of Maharashtra CO3: Maharashtra Students studied the history of folklore Students became aware of folk literature, folk songs, folk drama, and folk tales. CO4: Students became aware of folk tales and folk music, folk language. Students became aware of folk proverbs, idioms, proverbs, riddles aware of the collection. CO5: Students became aware of folk literature, folk songs, folk drama, and folk tales. Linguistics students get acquainted with the nature of linguistics.
THIRD SEMESTER Course M. A .II	HINDI BHASHA KA VIKAS	CO1: Students became aware of the emergence and development of Hindi prose. Became familiar with the Dwivedi era, Chhayavad, Pragmatism, and the authors and creations of new poetry. CO2: Students became familiar, Chhayavad; Progressivism. Students became familiar with experimentalism and new poetry. CO3: Students became aware of the historical vision of the students. Became familiar with the modern period of the history of Hindi literature. CO4: Students became familiar with the modern period of the history of Hindi literature. Became aware of the emergence and development of Hindi prose. CO5: Students became aware of Chhayavad. Got acquainted with the poetic characteristics of progressivism, experimentalism.
THIRD SEMESTER Course M. A .II	HINDI SAHITYA KA ITIHAS	CO1: Students became familiar with Dwivedi era, Chhayavad, Progressivism. Became familiar with experimentalism and new poetry. CO2: Major literary trends of Dwivedi era, Chhayavad, Progressivism, and new poetry. Got acquainted with the poetic characteristics of progressivism, experimentalism. CO3: Became familiar with the Dwivedi era, Chhayavad, Pragmatism, and the authors and creations of new poetry. Students became aware of Chhayavad CO4: Students became familiar with experimentalism and new poetry. Students became familiar with Dwivedi era, Chhayavad; Progressivism. CO5: Students became aware of the emergence and development of Hindi prose. Became familiar with the Dwivedi era, Chhayavad, Pragmatism, and the authors and creations of new poetry.
FOURTH SEMESTER M. A. II	HINDI SAHITYA KA ITIHAS (Adhunik Kaal)	CO1: Students became aware of the nature and different types of criticism. Literary criticism and practical review developed in the students. CO2: Students were introduced to the critical paradigms of the major critics of Hindi. Students get acquainted with the prevalence of folklore. CO3: Students got familiar with Bharatendu era criticism, Dwivedi era criticism, and A.Shukla era criticism.
THIRD SEMESTER Course M. A. II	Hindi Alochana	





		CO4: Students became aware of a brief history of Hindi criticism. Students became familiar with critical approach and methods.
		CO5: Students became aware of the socio-cultural background and major trends of the period. Students became aware of folk proverbs, idioms, proverbs, riddles aware of the collection.
FOURTH SEMESTER Course M.A. II	BHARATIY LOKSAHITYA	
		CO1: Students get acquainted with the nature and importance of folklore. Students get acquainted with various types of folklore.
		CO2: Students get acquainted with the prevalence of folklore. Students get acquainted with the folk literature of Maharashtra.
		CO3: Students studied the history of folklore. Became aware of folk literature, folk songs, folk drama, folk tales
		CO4: folk language Students became aware of folk proverbs, idioms, proverbs, riddles aware of the collection. Students get acquainted with the prevalence of folklore.
		CO5: Indian Folklore Students get acquainted with the nature and importance of folklore. Students get acquainted with various types of folklore.
Programme Outcomes (PO), Programme Specific Outcomes (PSO) & Course Outcomes (COs) for SCIENCE FACULTY		
Department Of Botany		
B.Sc. Programme Outcomes (PO) Of Botany Department		
PO1	Understanding and Knowledge:	1) Structure, Function and environmental relationships of plant groups and plant diversity. 2) Plant identification, Classification and Systematic position. 3) The role of plants in Ecosystem functioning of world.
PO2	Intellectual skills	1) Students able to think logically and perform tasks into structured form. 2) Propose new ideas based on wide reading and use of internet, 3) able to transfer assimilated knowledge from one topic to another within biology. 4) Students able to evolve of information in developing fields.
PO3	Practical skills	1) Students acquired skill to carry out practical work, in the field and in the laboratory, with minimal risk. 2) Plant identification on basis of morphological and Anatomical characters. 3) Analysis of vegetation data. 4) Skill of developing nursery, mushroom culture and methods of development of organic farming and their use. 5) Analyse range of phytochemicals from plant materials in plant context of physiology and biochemistry. 6) Analysis of data using different statistical methods. 7) Plant disease diagnosis under plant pathology.
PO4	Scientific knowledge skill	Students able to apply the knowledge of life science and fundamentals of botany to study and analyze any plant form.
PO5	Problem Analysis	1) Students able to apply appropriate techniques for solving research related problems. 2) Identify taxonomic position of plants 3) able to formulate the research literature and analyses non reported plants using taxonomic literature like flora, herbarium.
PO6	Environment and sustainability	Understand the impact of plant diversity on environment and societal health, and demonstrate the knowledge and need for sustainable development.
PO7	Modern tool usage	Create, Select and apply appropriate techniques, resources and modern instruments and equipment for biochemical estimation, plant physiological activities of plants with an understanding of the application and limitations.
PO8	As a botanist for society	Apply reasoning informed by the contextual knowledge to assess plant diversity, plant identification and its importance for society and environmental health.
PO9	Ethics	Apply ethical principles and commit to environmental ethics and responsibilities and norms of the biodiversity conservation.
PO10	Target to Specialization	Developing the ability to demonstrate proficiently in the experimental techniques and methods for analysis, appropriate for their area of specialization within biology.
B.Sc. Programme Outcomes (PSOs) Of Botany Department		
PSO1		Understand the nature and basic concepts of phycology, Mycology, Lichenology and Taxonomy.
PSO2		Understand the nature and basic concepts of instrumentation and Laboratory Techniques.
PSO3		Understand the nature and basic concepts of cytology, genetics, Molecular biology, Microbiology, Plant physiology, Ecology and Phytogeography.
PSO4		Understand the nature and basic concepts of utility and methods of Bio fertilizer, Nursery and Gardening, Pharmacognosy, Horticultural Practices and Post Harvest technology.
PSO5		Understand the nature and basic concepts of Anatomy, palynology and Embryology, Stress biology, Economic Botany.



F.Y.B. Sc	Bo -111: Plant life and utilization- 1	<b>Course Outcomes</b>
		Co1 – Understand about the general characters, classification and life cycle of Bryophytes
		Co2 – Understand about the economic important of Algae, Fungi and Lichens and Bryophytes.
		Co3 – Students understand about utilization of fungi in agriculture, food, Industry and Pharmaceuticals.
		Co4 – Understand about general characters, classification and life cycle of algae.
		Co5 – Understand about general characters, classification and life cycle of fungi.
	Bo 112-Plant Morphology and Anatomy	Co1 – Understand the nature and basic concepts of utility and methods of Bio fertilizer, Nursery and Gardening, Pharmacognosy, Horticultural Practices and Post Harvest technology.
		Co2 –Understand the nature and basic concepts of Anatomy, palynology and Embryology, Stress biology, Economic Botany.
		Co3- Students learn about the application of Morphology in Identification and classification of plants.
		Co4 – Students understands structure of simple and complex tissues.
		Co5- Understands internal structure of Dicot root, stem and leaf.
		Co6- Students understands internal structure of Monocot root, stem and leaf.
		Co1 – Students understand the life cycle of algae, fungi, lichen, bryophytes.
F.Y.B. Sc	Bo 113 Practical based on Bo 111and Bo 112	Co2- Students observes specimen and slides of primitive plant groups.
		Co3 – Students will be able to identify the forms of major groups of plants.
		Co4- Students will be able to compare and contrast the characteristics of the different groups of algae, fungi and bryophytes.
		Co5- Students learn to carry out practical work in the field and in the laboratory with minimal risk.
		Co6 – Students Know the botanical name, family Morphology of plant parts.
		Co7- Students develop skill of Mushroom cultivation
		Co8- Students learn to differentiate different types of Inflorescence and Fruits.
		Co9- Students understands internal organization of monocot and observing under Microscope.
	Sem II	
	Bo -121: Plant life and utilization- 2	Co1- Students understands about general characters, classification and lifecycle of pteridophytes.
		Co2- Students understand about general characters, classification and life cycle of Gymnosperm and Angiosperms.
		Co3 – Students learn about utilization and economic importance of pteridosperm, Gymnosperm and Angiosperms.
		Co4- Students understands and compare monocots and dicots.
		Co5- Students will be able to communicate.
	F.Y.B. Sc (CBCS) Course outcome	Co1 – Students achieve up to date level of understanding of plant Science.
		Co2- Students learn how plant survive and interact with other living and non- living things in the Environment.
		Co3- Students understands plant diversity in terms of structure, functions and environmental relationships.
		Co4- Students Know the role of plants in the functioning of the ecosystem.
		Co5- Students able to think logically and organize tasks into a structured form.
		Co6- Students learn to carry out practical work, in the field and in the laboratory with minimal risk.
		Co7- Students learn to create select and apply appropriate techniques, resources and modern instruments with an understanding of the application and limitations.
	SEM-I	
		Co1- Students will develop the skill of plant parts (vegetative and floral) coming under the families prescribed in theory syllabus.
		Co2- Students get knowledge of identification, classification and nomenclature of Angiospermic plants.



S. Y. B. Sc.	Bo. 231 Taxonomy and plant ecology	Co3- Students study the Bentham and Hooker's system of classification in detail.
		Co4- Students study the plant families covering different groups.
		Co5- Students learn about ecology
		Co6- Understands the population and community ecology.
		Co7- Students learn the approaches to the study of ecology.
	Bo. 232 Plant Physiology	Co1- know about the requirements of mineral nutrition for plant growth.
		Co2- Understands the process of photosynthesis and nitrogen metabolism.
		Co3- Students know about the plant growth and plant growth hormones.
		Co4- Understands the relation between structure and function as it relates to the plant cells and tissues.
		Co5- Students gain the knowledge of various metabolic and Physiological processes unique to plants.
		Co6- Understand the importance and scope of plant physiology.
		Co7- Understand the plant and plant cells in relation to water.
S. Y. B. Sc. (CBCS)		Co8- Understand the moveent of sap and absorption of water in plants.
		Co9- Students learns seed dormancy and process of seed germination.
	Bo. 233 -Practical based on Bo-231 and Bo-232	Co1- student learn the tools of taxonomy and ecological instruments.
		Co2- Students know about flowering plant in botanical terms.
		Co3- Students learn plant families.
		Co4- Understands the ecological adaptations in Hydrophytes, xerophytes.
		Co5- Understand the vegetation by list count method.
		Co6- Student learn the photochemical test for starch and protein.
		Co7- Students know the isolation of leaf protein concentration.
		Co8- Understands the Diffusion Pressure Deficit (DPD) concept.
		Co9- Students learn the transpiration process.
		Co10- Students understands Imbibition in seeds, Ringing Experiments, Arc Auxanometer, Spectrophotometers, Nitrogen fixing bacteria/BGA.
		Co11- Students learn how to calculate seed germination percentage and vigour index.
	SEM-II	
	Bo.241 – Plant Anatomy and Embryology	Co1- Students understand the anatomy of all parts of plant and different types of tissue systems.
		Co2- Students learn the application of plant anatomy in various branches of botany.
		Co3- Students learn the structure and function of epidermal tissue system and vascular tissue system.
		Co4- Students understands the principles involved in distribution of various mechanical tissues in leaf, stem, roots of Dicot and monocots.
		Co5- Understand process of normal secondary growth in stems of annual and perennial plants.
		Co6- Learns process of Anomalous secondary growth in plants and their causes.
		Co7- Students learn the micro and megasporogenesis.
		Co8- Students learn the mechanisms of pollination and process of fertilization in plants.
		Co9- Students understand types of endosperm and types of embryo and seed formulation.
		Co10- Understand the development of Male and Female gametophyte.
	242 - Plant Biotechnology	Co1- Students learn the concept, scope and importance of plant Biotechnology.
		Co2- Students gain the knowledge on plant tissue culture as well as Micropropagation, Haploid production, protoplast fusion etc. and their application.



		Co3- Students learn the use of single cell protein.
		Co4- Students understands the Genomics, Proteomics and Bioinformatics.
		Co5- Understands the concept of Bioremediation.
		Co6- Students learn the process of Genetic engineering.
		Co7- Understands the Biofuel technology, biogas, Bioethanol, Biobutanol, Biohydrogen.
	Bo.243-Practical based on Bo-241 and Bo- 242	Co1- To learn the epidermal tissue system.
		Co2- Students understand the mechanical tissues and their distribution in root, stem, leaves.
		Co3- Students learn the normal secondary growth in dicot stem.
		Co4 – Students understand the anomalous secondary growth.
		Co5- Students learn the tetrasporangiate anther and types of ovules.
		Co6- Understands the dicot and the monocot embryo.
		Co7- Students learn working and principles of laboratory instruments
		Co8- Students learn process of Surface sterilization and Inoculation of nodal sector.
		Co9- Students develop skill of cultivation of <i>spirulina</i> .
		Co10- Students learn about the transgenic crops.
		Co11- Understands the Principal and working of agarose gel electrophoresis, centrifuge.
	Sem V	
T. Y. B.Sc. (2015)	BO-331 Cryptogamic Botany	CO1. Students understand the diverse group of lower plants.
		CO2. Students the evolutionary significance of these groups.
		CO3. Students learn about the structural features including vegetative and reproductive structures.
		CO4. Students recognize the economic importance of lower plants.
	BO-332 Cell and Molecular Biology	CO1. Students gain knowledge about the basic structure and functions of cells.
		CO2. Understand the mechanism of gene regulation and expression.
		CO3. Students know the energy production and utilization in cells.
		CO4. Understand the various concepts of cell.
	BO-333 Genetics and Evolution	CO1. Students understand the basic principles.
		CO2. Students analyze patterns of inheritance.
		CO3. Students know the structure and function of DNA and RNA.
		CO4. Students know the DNA, RNA processes.
	BO-334 Spermatophyta and Paleobotany	CO1. Students understand classification system.
		CO2. Students understand the concepts of alternation of generation.
		CO3. Recognize the economic significance.
		CO4. Understand the fossilization process and the types of plant fossils.
	BO-335 Horticulture And Floriculture	CO1. Know the classification and identification of important floriculture plants.
		CO2. Understand the reproductive biology of plants.
		CO3. Know the importance of soil fertility and nutrient management.



	CO4. Understand the various types of plant growth regulators and their applications.
BO-336 Computational Botany	CO1. Students the fundamental biological concepts.
	CO2. Students develop computational skills, tools and techniques commonly used in plant sciences including data analysis and bioinformatics tools.
	CO3. Students able to identify and solve biological problems using computational approaches.
	CO4. Students develop models beneficial to plants life.
Sem VI	
Bo.341- Plant physiology and Biochemistry	Co1- Students learn about Photosynthesis, Respiration, Translocation of organic solutes, stress physiology etc. Co2- Students understand the concept of Carbohydrates, Amino acids and proteins, lipids, enzymology, secondary metabolites.
Bo.342- Plant Ecology and Biodiversity	Co1- Students know about Plant Ecology, Environmental crisis. Co2- Students gain the knowledge about Environmental Impact Assessments. Co3- Students develop skill of Environmental Audit, Ecology and Economics. Co4- Students able to gain knowledge of Remote sensing. Co5- Students learn the concept of Biodiversity characterization, Biodiversity loss, Inventorying and monitoring of Biodiversity, conservation of Biodiversity, In situ and Ex situ conservation.
Bo.343-Plant Pathology	Co1- Understands fundamental of plant Pathology, Disease development, defense mechanisms. Co2- Students learn methods of studying Plant diseases. Co3- Students gain the knowledge about Fungal Plant Diseases, Bacterial Plant diseases, Mycoplasma Plant Diseases, Nematodal plant diseases, viral Plant diseases, non-parasitic diseases. Co4- Students develop skill of principles of plant disease control, molecular Diagnostics and Transgenic in crop protection.
Bo.344- Medicinal and Economic Botany	Co1- Students understand the concept of pharmacognosy, Ayurvedic pharmacy. Co2- Understands analytical Medicinal botany. Co3- Students develop the skill of cultivation and processing of herbal drugs. Co4- Students gain the knowledge about medicinally important drugs. Co5- Students know about Ethnology, Economic Botany.
Bo.345- Plant Biotechnology	Co1- Students understand about Biotechnology, Plant tissue culture, Germplasm and cryopreservation. Co2- Understands the transgenic Plants as Bioreactors. Co3- Students gain knowledge about Biotechnology of biological nitrogen fixation. Co4- Students Know about Biotechnology and Society. Co5- Students understands the concept of Bioinformatics, Genomics and Proteomics.
Bo.346- Plant Breeding and Seed Technology	Co1 -Understands the plant introduction concept Plant Breeding scope and importance and acclimatization. Co2 – Students learn the selection methods. Co3- Students gain the knowledge about Hybridization. Co4- Students Know about Heterosis and hybrid vigour. Co5- Students learn about Mutation breeding, importance of polyploidy and Aneuploidy in crop improvement. Co6- Students know the Breeding for stress tolerance. Co7- Understands the seed certification, seed processing, seed sampling, storage and packaging, Physical purity analysis, seed Testing, Germination Testing, seed marketing.
	CO1- Students achieve the knowledge of Algae, Fungi, Bryophytes, Pteridophytes. Co2 – Students understand the various stages of mitosis and meiosis.
	Co3- Students learn chromosome Morphology and maceration technique.



	Practical 1 Bo.347	Co4- Students achieve the knowledge about polytene chromosome, plant Genomic DNA extraction.
		Co5- Understands estimation of DNA.
		Co6- Students learn the estimation of chlorophyll-a and chlorophyll-b by spectrometric method.
		Co7- Understands the separation of photosynthetic pigments by paper chromatography.
		Co8- Students gain estimation of soluble proteins, separation of amino acids.
		Co9- Students achieve the Ringing experiment, Hill reaction, perform qualitative test.
		Co10 – Understands the callus induction, application of biofertilizers, transgenic plants.
	Practical 2 Bo. 348	Co1- Students learn the structural heterozygotes, induction of tetraploid
		Co2- Understands preparation of salivary gland chromosome.
		Co3- Students gain frequency of PTC taste Sensitivity.
		Co4- Students understands how to solve genetic problems.
		Co5- Students learn Morphology and internal structure of <i>pinus</i> and <i>Gnetum</i> .
		Co6- Students understand the eight families.
		Co7 -Students achieve the knowledge of identification of plant with the help of flora.
	Practical 3 Bo.349	Co8- Understands the polluted water bodies, physiological properties of water body.
		Co9- Students learn the acquisition of ecological data by using GPS.
		Co10- Students achieve applications of diversity indices, measure latitude, longitude by GPS.
		Co11- Students develop skill of Hybridization techniques.
		Co12- Understands the effect of chemical mutagens on seed germination, Polyploidy induction.
		Co1- Understands the phenology of fruit, Vegetables crops.
		Co2- Students gain knowledge about garden tools, garden containers, cutting, layering, budding techniques.
		Co3- Students develop skill about training and pruning, harvesting of cut flowers, preservation methods, making dry flowers methods.
		Co4- Students gain the knowledge of central tendency, representations of data.
		Co5- Students solve able to statical problems.
		Co6- Students develop skill to preparation culture media, culture techniques.
		Co7- Students gain the knowledge of fungal, bacterial, Mycoplasma, viral diseases of plants.
		Co8- Students understand the drug plants Morphology and internal characters, economic importance.
		Co9 – Students develop skill preparation of ayurvedic formulations, Qualitative analysis.
		Co10- Students learn to calculate stomatal index.

#### Department of Statistics

POs		Programme Outcomes (POs)
PO1	Understanding and Knowledge	Obtain knowledge with facts and figures related to various subjects in basic sciences such as
		Physics, Chemistry, Biology, Mathematics, etc.
	Skilled communicator	Understand the fundamental concepts, principles, and scientific theories related to various
		scientific phenomena and their relevance in daily life.
	Practical skills	Acquire expertise in handling scientific instruments, planning and performing laboratory
		experiments nothing losing the observations and drawing logical inferences from them.
	Scientific knowledge skill	Evaluate the given scientific data critically and systematically and drawing objective conclusions.
	Problem Analysis	Able to think creatively (divergently and convergent) to propose novel ideas in explaining facts or providing new solution to the problems.





PO6	Literary Ability	Develop the scientific outlook not only with respect to science subjects but also in all aspects related to life.
PO7	International Language	Absorb ethical, moral and social values in personal and social life leading to highly cultured and civilized personality.
PO8	Writing Skills	Realize the knowledge of subjects in other faculties such as humanities, performing arts, social sciences etc. can greatly and effectively influence & inspire in evolving new scientific theories and inventions.
PO9	Ethics	Obtain knowledge with facts and figures related to various subjects in basic sciences such as
PO10	Target to Specialization	Acquire expertise in handling scientific instruments, planning and performing laboratory
<b>PSOs</b>		<b>Programme Specific Outcomes (PSOs)</b>
PSO1		Develop an understanding of various statistical tools, techniques and software.
PSO2		Apply critical and contextual approaches across wide variety of subject matter.
PSO3		Develop logical thinking to comprehend key facts leading to formulation of the solution process.
PSO4		Develop self-confidence and awareness of general issues prevailing in the society.
PSO5		Integrate knowledge, skill and attitude that will sustain an environment of learning and creativity.
<b>Course Outcomes (COs)</b>		
Semester-I	Descriptive Statistics Paper-I	CO1. Building of different electronic circuits for specific applications is the main aspect of this course.
	Discrete Probability Paper-II	CO2. Knowledge and use of graphical technique and interpret
		CO3 Computation of various measures of central tendency, Dispersion, Skewness and Kurtosis.
		CO1. Comparison between random and non-random experiments.
		CO2. Finding the probabilities of events.
	Practical Course Paper-III	CO3. Obtaining the probability distribution of random variable (one or two dimensional) in the given situation
		CO4. Application of standard discrete probability distribution to different situation.
		CO1. Computation of the various measures of central tendency, Dispersion, Skewness and Kurtosis.
		CO2. Interpretation of summary statistics of computer output.
F.Y. B.Sc.		
Semester-II	Descriptive Statistics Paper-I	CO1. Computation of the correlation coefficient for bivariate data and interpret it.
	Discrete Probability Distribution Paper-II	CO2. Analysis of data pertaining to attributes and to interpret the results.
		CO3. Summary and analysis of the data using computer.
		CO4. Application of statistics in the various field.
		CO1. Obtaining the probability distribution of random variable (one or two dimensional) in the given situation
	Practical Course Paper-III	CO2. Application of standard discrete probability distribution to different situation.
		CO1. Computation of the correlation coefficient, regression coefficients.
		CO2. Fitting the binomial distribution.
		CO3. Analysis data pertaining to discrete and continuous variables and to interpret result.
	ST-231 Discrete Prob. Distri.	CO4. Computing the probabilities of bivariate distributions.
		CO1. Study of discrete probability distributions.
	Time series and R-software	CO2. Knowledge and study of different component of time series and analyze time series data.
		CO3. Knowledge and study of different command of R-Software to analyze the statistical data.
	ST-241 Statistical Methods Paper-I	CO4. Knowledge and study of multiple regression and multiple and partial correlation coefficients.
		CO5. Application of statistics in the field demography.




		CO6. Testing of the hypothesis particularly about mean, variance, correlation, proportions.
	ST-232 Continuous probability Distributions.	CO1. Study of the standard univariate continuous probability distributions.
	ST-242 Sampling Distributions And Inference Paper- II	CO2. Knowledge and study of bivariate continuous probability distributions.
		CO3. Study of exact sampling distributions (Chi-Square, t, F).
		CO4. Testing of the hypothesis particularly about mean (unknown population variance), variance, goodness of fit and independence of attributes.
	Practical Course Paper- III	CO1. Computing the multiple and partial correlation coefficients, trivariate multiple regression plane, to find residual sum of squares and adjusted residual sum of squares. (using calculators and MSEXCEL), fit various discrete and continuous distribution, test the goodness of fit, to draw model samples (using calculators and MSEXCEL).
		CO2. Testing the various hypothesis included in theory.
		CO3. Analysis of the time series data.
	<b>Department of Electronics</b>	
	<b>Programme Outcomes (POs) for B. Sc. Electronics</b>	
PO1	Understanding and Knowledge:	To foster scientific attitude, provide in-depth knowledge of scientific and technological concepts of Physics.
PO2	Skilled communicator	To enrich knowledge through problem solving, minor/major projects, seminars, tutorials, review of research articles/papers, participation in scientific events, study visits, etc.
PO3	Practical skills	To familiarize with recent scientific and technological developments.
PO4	Scientific knowledge skill	To create foundation for research and development in Physics.
PO5	Problem Analysis	To help students to learn various experimental & computational tools thereby developing analytical abilities to address real world problems.
PO6	Literary Ability	To train students in skills related to research, education, industry, and market.
PO7	International Language	problem solving, minor/major projects, seminars, tutorials
PO8	Writing Skills	developing analytical abilities to address real world problems.
PO9	Ethics	to research, education, industry, and market.
PO10	Target to Specialization	To help students to build-up a progressive and successful career in Physics.
<b>Programme Specific Outcomes (PSOs) for B. Sc. Electronics</b>		
PSO1		To understand importance of Electronics in day today life
PSO2		To make the students learn through problem solving
PSO3		To understand basics of electronic circuits
		to research, education, industry, and market.
		To understand few electronic systems
	<b>Course</b>	<b>Course outcomes (COs)</b>
	EL- 111: Basics of Applied Electronics	CO1. To identify different parameters/functions/specifications of components used in electronic circuits
		CO2. To solve problems based on network theorems.
		CO3. To perform simulations using simulator for analyzing network performance
		CO1. To analyze performance parameters based on study of characteristics of electronic devices like diode, transistors etc.



	EL- 112: Electronic Devices and Circuits	CO2. To choose proper electronic devices as per the need of application
		CO3. To perform simulations for designing and analyzing diode/transistor circuits
		CO4. To build and test the circuits like street light controller using electronic devices
	EL- 113: ELECTRONICS LAB IA	CO1. To identify different components and devices as well as their types
		CO2. To understand basic parameters associated with each device
		CO3. To know operation of different instruments used in the laboratory
F.Y. B.Sc. Semester II	EL-121: Fundamentals of Digital Electronics	CO1. To solve problems based on interconversion of number systems
		CO2. To reduce the expression using Boolean theorems
		CO3. To reduce expressions using K maps in SOP and POS forms
		CO4. To understand how to use flip flops to build modulus counter
		CO5. To familiarize with applications of counters like ring counter or event counter
	EL- 122: Analog and Digital Device applications	CO1. To compare different opamps as per specifications or performance parameters
		CO2. To understand opamp circuits and its usefulness in different applications
		CO3. To know operating principle of IC 555 in different configurations
		CO4. To understand different types of DAC and their performance parameters
		CO5. To study different types of ADC and their performance parameters
	EL- 123: ELECTRONICS LAB IB	CO1. To connect op-amp circuits and analyze the output
		CO2. To build application circuits of op-amp
		CO3. To design the output frequency of IC 555 as a stable/monostable multivibrator
	EL-231: Communication Electronics	CO1. Understand different blocks in communication systems, types of noise in communication systems and its different parameters
		CO2. Understand need of modulation, modulation process and amplitude modulation and demodulation methods
	EL-232: Digital Circuit Design	CO3. Analyse generation of FM Modulation and demodulation methods and comparison
		CO1. Distinguish between different logic families based on their performance parameters
		CO2. Analyze basic combinational logic circuits for simple applications
		CO3. Design combinational logic circuits using K maps for identified applications
		CO4. Design Sequential logic circuits using state diagram, excitation table for identified applications
	EL-233: Paper- III: Practical Course: SEMESTER III	CO1. Describe and explain the techniques of generation of AM/ FM and demodulation
		CO2. Design FSK generation using standard IC XR 2206 referring data manuals
		CO3. Describe and explain the TDM/ FDM generation technique
		CO4. Demonstrate PPM/PWM/PAM and PCM techniques using standard circuits in data
	EL-241: Analog Circuit Design	CO1. Design single/multistage amplifier using transistor and analyze their frequency response base on gain-bandwidth product due to coupling /bypass capacitors
		CO2. Classify and compare different power amplifiers
		CO3. Understand and design push pull amplifier and need of heat sinks
	EL-242: Microcontroller and Python Programing	CO1. Identify the features and architectural details of microcontroller(arduiono)
		CO2. Write code/programme using open-source programing language (Arduino) for basic identified applications
		CO3. Understand programing basics of python programing language
		CO4. Understand special features of python programing language such as importing modules, directory, tupules



S.Y. B.Sc. Semester IV	EL-243: Paper- III: Practical Course: SEMESTER IV	CO1. Describe and explain the design procedure of different types of active filters and analyze its frequency response
		CO2. Demonstrate positive feedback for oscillator circuits using standard ICs
		CO3. Describe and explain design procedure for two stage amplifiers and application circuits
Department of Physics		
Programme Outcomes (POs) for B. Sc. Physics		
PO1		To foster scientific attitude, provide in-depth knowledge of scientific and technological concepts of Physics.
PO2		To enrich knowledge through problem solving, minor/major projects, seminars, tutorials, review of research articles/papers, participation in scientific events, study visits, etc.
PO3		To familiarize with recent scientific and technological developments.
PO4		To create foundation for research and development in Physics.
PO5		To help students to learn various experimental & computational tools thereby developing analytical abilities to address real world problems.
PO6		To train students in skills related to research, education, industry, and market.
PO7		To help students to build-up a progressive and successful career in Physics.
PO8		To help studentsin understanding theoretical and mathematical development of physics
PO9		To learn Physics through experimentation
PO10		To develop Experimental skills
Programme Specific Outcomes (PSOs) for B. Sc. Physics		
	PSO1	Understanding of core knowledge on various papers of Physics. Clear the concepts which help them in understanding physical phenomenon in nature.
	PSO2	Demonstrate skills and competencies to conduct scientific experiments related to Physics.
	PSO3	Identify their area of interest and further specialize in the Physics.
	PSO4	Analyze situations, search for truth and extract information, formulate and solve problems in a systematic and logical manner.
	PSO5	Possess advanced knowledge and skills in job market for various technical industries.
M.Sc. Physics		
 M.Sc. Physics	Programme Outcomes (POs)	PO1. To foster scientific attitude, provide in-depth knowledge of scientific and technological concepts of Physics.
		PO2. To enrich knowledge through problem solving, minor/major projects, seminars, tutorials, review of research articles/papers, participation in scientific events, study visits, etc.
		PO3. To familiarize with recent scientific and technological developments.
		PO4. To create foundation for research and development in Physics.
		PO5. To help students to learn various experimental and computational tools thereby developing analytical abilities to address real world problems.
		PO6. To train students in skills related to research, education, industry and market.
		PO7. To help students to build-up a progressive and successful career in Physics.
		PO8 To help students understanding theoretical and mathematical development of physics
		PO 9To help students to build-up a progressive and successful career in Physics.
		PO 10 To train students in skills related to research, education, industry, and market.

	Programme Specific Outcomes (PSOs)	PSO1. Understanding core knowledge on various papers of Physics. Clear the concepts which help them in understanding physical phenomenon in nature. PSO2. Demonstrate skills and competencies to conduct scientific experiments related to Physics. PSO3. Identify their area of interest and further specialize in the Physics. PSO4. Analyze situations, search for truth and extract information, formulate and solve problems in a systematic and logical manner. PSO5. Possess advanced knowledge and skills in job market for various technical industries.
Class	Course	<b>Course outcome (COs)</b> CO1. To understand concepts in topic motion, work energy, fluid mechanics and properties of matter
F.Y. B.Sc. Semester I	PHY-111 Mechanics and Properties of Matter	CO2. Understanding the concepts of energy, work, power. CO3. Understanding of the concepts of conservation of energy, surface tension and viscosity the concepts of elasticity and be able to perform calculations using them.
	PHY-112 Physics Principles and Applications	CO1. To understand the general structure of atom, spectrum of hydrogen atom. CO2. To understand the atomic excitation and LASER principles. CO3. To understand the bonding mechanism and its different types. CO4. To demonstrate an understanding of electromagnetic waves and its spectrum.
	PHY-113 Physics Laboratory 1A	CO1. To identify different components and devices as well as their types CO2. To understand basic parameters associated with each device CO3. To know operation of different instruments used in the laboratory
F.Y. B.Sc. Semester II	PHY-121 Heat and Thermodynamics	CO1 To understand concepts in topic Fundamentals of Thermodynamics, Applied Thermodynamics, Heat Transfer Mechanisms, Thermometry
	PHY-122 Electricity and Magnetism	CO1 To understand the concept of the electric force, electric field and electric potential for stationary charges. CO2 Able to calculate electrostatic field and potential of charge distributions using Coulomb's law and Gauss's law. CO3 To understand the dielectric phenomenon and effect of electric field on dielectric. CO4 To Study magnetic field for steady currents using Biot-Savart and Ampere's Circuital laws. CO5 To study magnetic materials and its properties.
	PHY-123 Physics Laboratory 1B Practical	CO1 To identify different components and devices as well as their types CO2 To understand basic parameters associated with each device CO3 To know operation of different instruments used in the laboratory
	PHY-231: Mathematical Methods in Physics-I	CO1 Understand the complex algebra useful in physics courses. CO2 Understand the concept of partial differentiation. CO3 Understand the role of partial differential equations in physics. CO4 Understand vector algebra useful in mathematics and physics.



S.Y. B.Sc. Semester III		CO5 Understand the concept of singular points of differential equations.
	PHY-232: Electronics	CO1 Apply different theorems and laws to electrical circuits.
		CO2 Understand the relations in electricity.
		CO3 Understand the parameters, characteristics and working of transistors.
		CO4 Understand the functions of operational amplifiers.
		CO5 Design circuits using transistors and applications of operational amplifiers.
	OR	
	PHY-232: Instrumentation	CO1.Understand the functions of different instruments.
		CO2.Use different instruments for measurement of parameters.
		CO3. Design experiments using sensors.
	PHY-233: Practical Course (Laboratory 2A)	CO1 U se various instruments and equipment.
		CO2 Analyze the data, plot appropriate graphs and reach conclusions from data analysis.
		CO3 Investigate the theoretical background of an experiment.
		CO4 Work in a group to plan, implement and report on a project/experiment.
IV	PHY-241: Oscillations, Waves, and Sound	CO 1. Understand the physics and mathematics of oscillations.
		CO 2. Solve the equations of motion for simple harmonic, damped, and forced oscillators.
		CO 3. Describe oscillatory motion with graphs and equations, and use these descriptions to solve problems of oscillatory motion.
		CO4. Explain oscillation in terms of energy exchange, giving various examples.
		CO5. Understand the mathematical description of travelling and standing waves.
		CO6. Explain the Doppler effect, and predict in qualitative terms the frequency change that will occur for a stationary and a moving observer.
		CO7. Explain in qualitative terms how frequency, amplitude, and wave shape affect the pitch, intensity, and quality of tones produced by musical instruments.
	PHY-242: Optics	CO 1. Acquire the basic concepts of wave optics
		CO 2. Describe how light can constructively and destructively interfere
		CO3. Summarize the polarization characteristics of electromagnetic waves
		CO4. Understand optical phenomena such as polarization, birefringence, interference and diffraction in terms of the wave model.
		CO5. Analyze simple examples of interference and diffraction phenomena.
		CO6. Be familiar with a range of equipment used in modern optics.
	PHY-243: Practical Course (Laboratory 2B)	CO1. Use various instruments and equipment
		CO2. Design experiments to test a hypothesis and/ determine the value of an unknown quantity.
		CO3. Investigate the theoretical background to an experiment.







T. Y. B. Sc. Semester IV		CO3. To understand the concept of spherically symmetric potentials
		CO4. To understand Operators in Quantum Mechanics
	PH-343: Thermodynamics and Statistical Physics	CO1.To understand The Kinetic Theory of Gases
		CO2. To understand The Maxwell Relations and Application
		CO3.To study Elementary Concepts of Statistics
		CO4. To understand The Statistical Ensembles
		CO5. To understand The Quantum Statistics
	PH 344 : Nuclear Physics	CO1. To understand the Basic Properties of Nucleus
		CO2. To understand the concepts of Radioactivity
		CO3. To study Nuclear forces
		CO4. To study Particle Accelerator and Detectors
	PH345 : Electronics	CO1. To study the Transistor amplifier
		CO2. To study the Field Effect Transistor
		CO3. To study the Operational Amplifier
		CO4. To study the Timer (IC555)
		CO5. To study the Regulated Power Supply
	OR	
	PH345: Advanced Electronics	CO1. To study Sensors, Thermistors, Thermocouples, Motion sensors, Photo detectors, Optical sensors
		CO2. To study Signal Conditioning using OP-AMP
		CO3. To study Digital signal conditioning
	PH346 Elective II: Lasers	CO1. To study Laser and its properties
		CO2. To study Laser Action and Laser Oscillator
		CO3. To study Characteristics of Laser
		CO4. To study Types of Lasers and Applications of Lasers
	PH347 Laboratory Course I	CO1. Use various instruments and equipment.
		CO2. Work in a group to plan, implement and report on a project/experiment.
		CO3. Design experiments to test a hypothesis and/or determine the value of an unknown quantity.
		CO4. Investigate the theoretical background of an experiment.
	PH348: Laboratory Course II	CO1. To identify different components and devices as well as their types
		CO2. To understand basic parameters associated with each device
		CO3. To know operation of different instruments used in the laboratory
		CO4. To connect circuit and do require performance analysis
		CO5. To compare simulated and actual results of given particular experiment
	PHY-349: Physics Project	CO1. Access the data from given thesis
		CO2. Read and refer the research papers
		CO3. Handle various methods required in research work



M.Sc. Physics		
		Course Outcomes (COs)
Semester I	PHCT-111 Mathematical Methods in Physics	CO1. To know about complex analysis
		CO2. To study Vector Space and Matrix Algebra
		CO3. To study Special Functions
		CO4. To study Fourier Series and Integral Transforms
	PHCT-112 Classical Mechanics	CO1. Constrained motion and lagrangian formulation
		CO2. Vibrational principles and Hamilton formulation
		CO3. Canonical transformation and Poisson bracket
	PHCT-113 Electronics	CO1. To study Semiconductor Devices and its Applications
		CO2. To study Special Function ICs and their Applications
		CO3. To study Digital Logic Circuits: Combinational Logic & Sequential logic
		CO4. To study Data Converters
	PHOTD2: Physics of Semiconductor Devices	CO1. To study Properties of Semiconductor and p-n Junctions
		CO2. To study Junction Transistor and Metal Insulator Semiconductor devices
		CO3. To improve experimental knowledge of students
	PHCP-115 Physics Laboratory-I (Electronics)	CO1. To study and use various electronic instruments
		CO2. Diode Pump Staircase generator using UJT
		CO3. Foldback Power Supply
		CO4. Crystal Oscillator & Digital Clock
		CO5. Voltage Control Oscillator using IC-566
Semester-II	PHCT-121 Electrodynamics	CO1. The outcome of this course is to understand the covariant formulation of electrodynamics to explore the unification of electricity and magnetism.
		CO2. Origin of the electromagnetic radiation by an accelerating charge particle: Its applications to linear and circular accelerators.
		CO3. Understanding of the scattering of electromagnetic wave by free and bound electron.
	PHCT-122 Atoms and Molecules	CO1- To understand the Atomic structure and atomic spectra
		CO2- To understand the Molecular Spectra – Rotational and vibrational spectra for diatomic molecules
		CO3- To understand the Resonance Spectroscopy, ESR and NMR Spectroscopy
	PHCT-123 Quantum Mechanics	CO1. Show an understanding of wave mechanics;
		CO2. Know the concept of operators in quantum mechanics.
		CO3. Perform calculations on wave functions, and solve the Schrödinger equation for simple potential problems.
		CO4. Apply Schrodinger's equation in Hydrogen atom;
		CO5. Describe the structure of the hydrogen atom and show an understanding of quantization of angular momentum.



Semester-II	PHOTC2: Laser and Applications	CO1. To study Interaction of radiation with matter
		CO2. To study Principle, Construction, Energy level diagram and working of various lasers
		CO3. To improve experimental knowledge of students
	PHCP-125 Physics Laboratory-II (General Lab)	CO1. To find the speed of light
		CO2. To determine Dielectric constant
		CO3. To study the Millikan Oil Drop method
		CO4. To study Michelson's Interferometer
		CO5. To perform Frank-Hertz experiment
Semester-III	PHCT-231 Statistical Mechanics	CO1. The outcome of the course on Statistical Mechanics to expose students to the theoretical techniques
		CO2. Understanding the interacting systems, phase transitions and the non-equilibrium phenomena.
		CO3. To understand the Ideal Bose and Fermi Systems
	PHCT-232 Solid State Physics	CO1- To understand the Band Theory of Solids
		CO2- To understand the Diamagnetism and Para magnetism
		CO3- To understand the Ferromagnetism, Antiferromagnetism and Ferrimagnetism
		CO4- To understand the Superconductivity
	PHCT-233 Experimental Techniques in Physics-I	CO1- To understand the Signals, random signals, and time series (basic), Signal analysis
		CO2- To understand the Vacuum Physics and fields applications of vacuum
		CO3- To understand the Pumps for High Vacuum (HV) and Ultra High Vacuum (UHV)
		CO4- To understand the Vacuum Measurements and Low Temperature Technique
	PHOT234M2: Material Science-I	CO1. To study Properties of Materials and Defects in Solids
		CO2. To study Solid Solutions and Diffusion in Solids
		CO3. To improve experimental knowledge of students
	PHCP-235 Physics Laboratory III	CO1. Laboratory course III deals with the experiments based on fundamental concepts in Physics.
Semester IV	PHCT -241 Nuclear Physics	CO1. Understand the fundamental principles and concepts governing nuclear and particle physics.
		CO2. Demonstrate knowledge and understanding of scientific and technological applications, of Nuclear Physics as well as their social, economic and environmental applications,
		CO3. Demonstrate comprehension of physical reality through estimation, approximation, and mathematical modeling, and understand how small number fundamental physical principles underlie a huge variety of interconnected natural phenomena.
		CO4. Able to explain the Rutherford's experiment, Nuclear Radiation and Charged Particle Accelerators.
	PHCT 242 Experimental Techniques in Physics- II	CO1. To study Radiation Sources and Detectors
		CO2. To study Structural Characterization and Thermal Analysis
		CO3. To study Morphological and Magnetic Characterization
		CO4. To study Spectroscopic Analysis
	PHOTB2: Physics of Nanomaterials	CO1. To study Introduction and Synthesis of Nanomaterials
		CO2. To study Properties and Application of Nanomaterials
		CO3. To improve experimental knowledge of students
		CO1. To study Metallurgical Thermodynamics
		CO2. To study Phase diagrams



Semester IV	PHOT244M2: Material Science-II	CO3. To improve experimental knowledge of students
	PHCP-245 : Project	CO1. To enhance the research quality
		CO2. To increase the research applications in Physics area
		CO3. To improve experimental knowledge of students
<b>Department of Mathematics</b>		
<b>Programme Outcomes (POs)</b>		
PO 1		Gain sound knowledge on fundamental principles and concepts of Mathematics.
PO2		Exhibit in depth the analytical and critical thinking to identify, formulate and solve real world problems of science and engineering.
PO3		Get a relational understanding of mathematical concepts and concerned structures, and should be able to follow the patterns involved, mathematical reasoning.
PO 4		A student should get adequate exposure to global and local concerns that explore them many aspects of Mathematical Sciences.
PO 5		Apply their skills and knowledge, that is, translate information presented verbally into mathematical form, select and use appropriate mathematical formulae or Techniques in order to process the information and draw the relevant conclusion.
PO 6		Be capable of undertaking suitable experiments/research methods while solving the real-life problem and would arrive at valid conclusions based on appropriate Interpretations of data and experimental results.
PO 7		Develop written and oral communications skills in order to effectively communicate design, analysis and research results.
PO 8		Demonstrate appropriate inter-personal skills to function effectively as an individual, as a member or as a leader of a team and in a multi-disciplinary setting.
PO 9		Acquire competent positions in industry and academia as well.
PO 10		Computing with applications related to Industrial, Engineering, Biological and Ecological problems.
<b>Programme Specific Outcomes (PSOs)</b>		
PSO 1		Give the students a sufficient knowledge of fundamental principles, methods and a clear perception of innumerable power of mathematical ideas and tools and know how to use them by modeling, solving and interpreting.
PSO 2		To equip the students sufficiently in both analytical and computational skills in Mathematical Sciences.
PSO 3		To develop a competitive attitude for building a strong academic - industrial collaboration, with focus on continuous learning skills.
PSO 4		Enhancing students overall development and to equip them with mathematical modeling abilities, problem solving skills, creative talent and power of communication necessary for various kinds of employment.
PSO 5		Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study.
<b>Course Outcomes (COs)</b>		
F.Y. B.Sc.		
(Sem-I)	Algebra (MT-111)	CO1. The course aids in basic understanding of the sets, relations, and functions as revision
		CO2.student able to calculate GCD and LCM using divisibility
	Calculus-I	CO1. Study of various properties of real numbers and its consequences
	(MT-112	CO2. Knowledge of limit of functions with examples and limit theorems.
		CO3. student know continuous function, continuous function on intervals with examples
	Practical Course Paper (MT-113)	CO1.student gains confidence in solving the problems
		CO2.using Maxima software student should study convergence and divergence of sequence.
	Analytical Geometry	CO1.student should know the significance of second-degree equation in x and y so as to classify the nature of graph in two dimension
	(MT-121)	CO2.student know various forms of planes



		CO3.student know various forms of spheres and significant points of equation of sphere
	Calculus-II	CO1.student should be familiar to obtain the derivative of different functions.
	(MT-122)	CO2.student should know the techniques of solving the differential equations
		CO3-student should able to solve various real-life problems.
	Practical Course Paper (MT-113)	CO1.student gains confidence in solving the problems
		CO2.using Maxima software student should study convergence and divergence of sequence.
S. Y. B. Sc. MT-231	Calculus of	CO1 The student should know partial derivatives and differentiability with higher order with applications.
	Several	CO2 Using the derivative test student should be able to find extreme values of various functions.
	Variables	CO3 The student should develop the skill of solving multiple integrals and their applications.
S. Y. B. Sc. MT-232	(A)	CO1 Student should able to solve algebraic and transcended equations by using different numerical methods.
	Numerical	CO2 Student should able to know different interpolation formulae and apply them to interpolate the given data.
	Methods & its applications	CO3 Student should able to differentiate and integrate by different numerical methods.
S. Y. B. Sc. MT-233	Mathematics	CO1 The student develops theoretical, applied and computational skills.
	on MT-231 & MT-232	CO2 The student gains confidence in proving theorems and solving problems.
		CO3 Student should able to plot 2D and 3D curves using Maxima software.
S. Y. B. Sc.	MT-241 Linear Algebra	CO1 Student should be familiar with matrices and its application to solve the system of linear equation.
		CO2 The student should be able to identify a set as a vector space and to find dimension, row space, column space, null space, rank and nullity.
		CO3 Student should be able to study various vector spaces using linear transformation
S. Y. B. Sc. MT 242(A)	Vector	CO1 Student should be familiar with gradient, divergence and curl of the functions.
		CO2 Using gradient student can find tangent, plane and normal line to the surface.
		CO3 Student should be familiar to solve line, surface and volume integrals so as to solve many real-life problems.
S. Y. B. Sc. MT-243	Mathematics Practical based	CO1 The student develops theoretical, applied and computational skills.
	on MT-241 & MT-242	CO2 The student gains confidence in proving theorems and solving problems of linear algebra, vector calculus and Dynamical System.
		CO3 Student should be able to solve various problems of linear algebra, vector calculus and Dynamical System using maxima software
T.Y. B.Sc.	Metric Spaces	CO1.Introductory Concepts
Semester-III	Paper I	CO2. Study continuous functions on metric spaces.
		CO3. Knowledge and study of connectedness and completeness property of Metric Spaces.
	Real Analysis I Paper II	CO1.Knowledge and study Sets and Functions.
		CO2.Study of convergence of sequences and series of Real Numbers.
	Problem course based on	CO1. Imparting skill to solve problems.
	paper I & II Paper III	
	Group Theory Paper IV	CO1.Learning of groups and subgroups.
		CO2.Knowledge and study of Permutation groups.
		CO3.Knowledge and study Homomorphisms of groups and factor groups.
	Ordinary Differential	CO1.Linear Differential Equations with constant coefficients.
	Equations Paper V	CO2. Non-Homogeneous differential Equations
		CO3.Power series solution of Differential Equations.
		CO4.System of first order equations.





	Problem course based on	CO1.Imparting skill to solve problems.
	paper III & IV Paper VI	CO2. Theory
	Operational Research. Paper VII	CO1. Knowledge and study Modeling with linear programming,
		CO2.Simplex Method, Duality,
		CO3.Transportation Model, The assignment model
	Number Theory VIII	CO1.Knowledge and study of Divisibility of integers,
		CO2.Congruences
		CO3.Greatest Integer Function
		CO4.Quadratic Reciprocity
		CO5.Diophantine Equations
	Practical Course IX	Imparting skill to solve problems.
Semester-IV	Complex Analysis Paper I	CO1.Knowledge and study of Complex Numbers
		CO2.Analytic functions Elementary functions
		CO3.Integrals Series, Residues and poles
	Real Analysis II Paper II	CO1. Study of Riemann Integrations
		CO2.Improper Integrals
		CO3.Sequences and series of functions.
	Problem Course based on	CO1.Imparting skill to solve problems.
	Paper I & II Paper III	
	Ring Theory Paper IV	CO1.Knowledge and study of Rings and Fields
		CO2.Ideals and Factor Rings, Factorization.
	Partial Differential Equations Paper V	CO1.Knowledge of Ordinary Differential equations in more than two variables and their methods of substitution,
		CO2.First order partial differential equations, Types and methods of solution.
	Problem course based on	CO1.Imparting skill to solve problems.
	Paper III & IV Paper VI	
	Labesgue Integration Paper VII	CO1. Study of Measurable Sets, Measurable Functions
		CO2.Lebesgue Integration, Fourier Series.
	Computational Geometry Paper VIII	CO1. Study of two-dimensional transformation,
		CO2.Three-dimensional transformation
		CO3.Plane curves, Space curves, Beizer Curves.
	Practical Course IX	CO1.Imparting skill to solve problems

#### Department of Chemistry

#### M. Sc. Programme outcomes (POs)

	<b>Course Name</b>	PO1: Demonstrate and apply the fundamental knowledge of the basic principles in the field of organic Chemistry and Analytical chemistry.
Semester II	PG	PO2: Create awareness in the field of chemistry.
		PO3: Apply knowledge to build up small scale industry for developing endogenous product.
		PO4: Apply various aspects of chemistry in natural products isolations, pharmaceuticals, dyes, textiles, polymers, petroleum products, forensic etc.



		Po5: Apply group theory to recognize and assign symmetry characteristics to molecules.
		PO6: Students able to Predict the reactivity of an organic compound from its structure.
		PO7: Students are trained to do different purification techniques in organic chemistry like recrystallization, distillation, steam distillation and extraction.
		PO8: Apply a fundamental understanding of the tools of optical spectroscopy.
		PO9: Students Able To write research project / paper in scientific manner.
		PO10: Students able to know Importance of Pharmaceutical industries.
Class		<b>M. Sc. Programme Specific outcomes (PSOs)</b>
M. Sc. - I & II	PG	
		POS1: Students able to logical thinking to address a problem in terms of chemical science.
		POS2: Explain the kinetics of the explosive photochemical and unimolecular reactions.
		POS3: Students Apply group theory to predicting concerted organic reactions.
		POS4: Develop basic skills for the multi-step synthesis of organic compounds.
		POS5: Synthesize the metal complexes and find out the percentage purity.
<b>PROGRAMME OUTCOMES OF CHEMISTRY (B.SC.)</b>		
<b>Class</b>	<b>Course Name</b>	<b>B. Sc. Programme outcomes (POs)</b>
F. Y. B. Sc To T. Y. B. Sc	UG	PO-1: Disciplinary knowledge and skill: A graduate student is expected to be capable of demonstrating comprehensive knowledge and understanding both theoretical and practical knowledge in all disciplines of Chemistry. Students can solve their subjective problems very methodically, independently and finally draw a logical conclusion. Further, the student will be capable of applying modern technologies, handling advanced instruments and Chemistry related soft-wares for chemical analysis, characterization of materials and in separation technology.
		PO-2: Skilled communicator: The course curriculum incorporates basics and advanced training in order to make a graduate student capable of expressing the subject through technical writing as well as through oral presentation.
		PO-3: Critical thinker and problem solver: The course curriculum also includes components that can be helpful to graduate students to develop critical thinking and to design, carry out, record and analyze the results of chemical reactions. Students will be able to think and apply evidence based comparative chemistry approach to explain chemical synthesis and analysis.
		PO-4: Sense of inquiry: It is expected that the course curriculum will develop an inquisitive characteristic among the students through appropriate questions, planning and reporting experimental investigation.
		PO-5: Team player: The course curriculum has been designed to provide opportunity to act as team player by contributing in laboratory, field-based situation and industry.
		PO-6: Skilled project manager: The course curriculum has been designed in such a manner as to enabling a graduate student to become a skilled project manager by acquiring knowledge about chemistry project management, writing, planning, study of ethical standards and rules and regulations pertaining to scientific project operation.
		PO-7: Digitally literate: The course curriculum has been so designed to impart a good working knowledge in understanding and carrying out data analysis, use of library search tools, use of chemical simulation software and related computational work.
		PO-8: Ethical awareness: A graduate student requires understanding and developing ethical awareness or reasoning which is adequately provided through the course curriculum. Students can also create an awareness of the impact of chemistry on the environment, society, and also make development outside the scientific community.
		PO-9: Environmental Awareness: As an inhabitant of this green planet a Chemistry graduate student should have many social responsibilities. The course curriculum is designed to teach a Chemistry graduate student to follow the green routes for the synthesis of chemical compounds and also find out new greener routes for sustainable development. The course also helps them to understand the causes of environmental pollution and thereby applying environmentally friendly policies instead of environmentally hazard ones in every aspect.
		PO-10: Lifelong learner: The course curriculum is designed to inculcate a habit of learning continuously through use of advanced ICT technique and other available e-techniques, e-books and e-journals for personal academic growth.
		<b>Programme Specific outcomes (PSOs)</b>
		PSO-1: Core competency: The chemistry graduates are expected to gain knowledge of the fundamental concepts of chemistry and applied chemistry through



F. Y. B. Sc To T. Y. B. Sc	UG	theory and practical. These fundamental concepts would be reflected in the latest understanding of the field to keep continues its progression.
		PSO-2: Communication skills: Chemistry graduates are expected to possess minimum standards of communication skills to read and understand documents so that they can solve their problems very methodically, independently and with logical argument. Graduates are expected to build good communication skill so that they can easily share their idea/finding/concepts to others.
		PSO-3: Critical thinking: Chemistry graduates are expected to achieve critical thinking ability to design, carry out, record and analyze the results of chemical reactions. They can have that much potential and confidence that they can overcome many difficulties with the help of their sharp scientific knowledge and logical approaches.
		PSO-4: Psychological skills: Chemistry graduates are expected to possess basic psychological skills so that they can deal with individuals and students of various socio-cultural, economic and educational levels. Psychological skills are very important for proper mind setting during performing, observing and giving conclusion of a particular reaction. It is also important for self-compassion, self-reflection, interpersonal relationships, and emotional management.
		PSO-5: Problem-solving: Graduates are expected to be well trained with problem-solving philosophical approaches that are pertinent across the disciplines.
<b>Class</b>	<b>Course Name</b>	<b>Course Outcomes (COs)</b>
F. Y. B. Sc	CH- 101: Physical Chemistry	CO.1.Students will be able to apply thermodynamic principles to physical and chemical process
		CO.2.To Understand Relation between Free energy and equilibrium and factors affecting on equilibrium constant.
		CO.3. To understand Concept to ionization process occurred in acids, bases and pH scale
		CO.4. To know Degree of hydrolysis and pH for different salts, buffer solutions
	CH- 102: Organic Chemistry	CO.1.The students are expected to understand the fundamentals, principles, and recent developments in the subject area
		CO.2. It is expected to inspire and boost interest of the students towards chemistry as the main subject.
		CO.3.To familiarize with current and recent developments in Chemistry.
		CO.4. To create foundation for research and development in Chemistry
		CO.1. Importance of chemical safety and Lab safety while performing experiments in laboratory
	CH- 103: Chemistry Practical Course I	CO.2 Determination of thermochemical parameters and related concepts
		CO.3 Techniques of pH measurements
		CO.4. Preparation of buffer solutions
		CO.5. Elemental analysis of organic compounds (non instrumental)
		CO.6. Chromatographic Techniques for separation of constituents of mixtures
	<b>Semester-II</b>	
	CH-201: Inorganic Chemistry	CO.1. Significance of quantum numbers
		CO.2. Describe stability of half-filled and completely filled orbitals.
		CO.3. Attainment of stable electronic configurations.
		CO.4. Define Fajan's rule, bond moment, dipole moment and percent ionic character.
	CH- 202: Analytical Chemistry	CO.1.Perspectives of analytical Chemistry
		CO.2. Stoichiometric calculation
		CO.3. Separation of binary mixtures and analysis
		CO.4. Basics of chromatography and types of chromatography
		CO.5. Measurement of pH
		CO.1. Inorganic Estimations using volumetric analysis
		CO.2.Synthesis of Inorganic compounds



S. Y. B. Sc. (CBCS)	CH- 203: Chemistry Practical –II	CO.3. Analysis of commercial products
		CO.4. Purification of organic compounds
		CO.5. Preparations and mechanism of reactions involved
		<b>Semester - I</b>
	CH-301 : Physical and Analytical Chemistry	Co1 – Explain factors affecting rate of reaction.
		Co2 –Explain / discuss / derive integrated rate laws, characteristics, expression for half-life and examples of zero order, first order, and second order reactions
		Co3 – Apply adsorption process to real life problem.
		Co4 – Apply the methods of expressing the errors in analysis from results.
		Co5 – Apply statistical methods to express his / her analytical results in laboratory.
	CH-302 : Inorganic and Organic Chemistry	Co1 -Explain and apply LCAO principle for the formation of MO's from AO's.
		Co2 – Apply IUPAC nomenclature to coordination compound.
		Co3- Explain / discuss synthesis of aromatic hydrocarbons.
		Co4 –Explain /Discuss important reactions of alkyl / aryl halides.
		Co5- To correlate reagent and reactions.
		Co6- Explain /Discuss important reactions of alcohols / phenols.
	CH-303 : Chemistry Practical - III	Co1 – Verify theoretical principles experimentally.
		Co2- Interpret the experimental data on the basis of theoretical principles.
		Co3 – Understand systematic methods of identification of substance by chemical methods.
		Co4- Set up the apparatus / prepare the solutions - properly for the designed experiments.
		Co5- Perform the quantitative chemical analysis of substances explain principles behind it.
		Co6 – Systematic working skill in laboratory will be imparted in student.
		<b>Semester - II</b>
	CH-401 : Physical and Analytical Chemistry	Co1- Discuss meaning of phase, component and degree of freedom.
		Co2- Define various terms, laws, differentiate ideal and no-ideal solutions.
		Co3-Apply conductometric methods of analysis to real problem in analytical laboratory.
		Co4-Apply colorimetric methods of analysis to real problem in analytical laboratory.
	CH-402 : Inorganic and Organic Chemistry	Co1- Explain different types of isomerism in coordination complexes.
		Co2- Apply principles of VBT to explain bonding in coordination compound of different geometries.
		Co3-Explain / discuss synthesis of carboxylic acids and their derivatives.
		Co4 – Perform inter conversion of functional groups
	CH-403 : Chemistry Practical - IV	Co1-Interpret the experimental data on the basis of theoretical principles
		Co2-Set up the apparatus properly for the designed experiments.
		Co3-Write balanced equation for all the chemical reactions performed in the laboratory.
		Co4-Verify theoretical principles experimentally
		<b>Semester - III</b>
		CO1.Apply mathematical equation for order of reaction.



		CO2.Estimate the energy of activation and order of reaction.
	CH-331: Physical Chemistry	CO3.Understand the Interionic Attraction theory.
		CO4.Study basic terms and subject application in molecular spectroscopy.
		CO5.Use of different spectra for understanding of molecular structure.
		CO6.Understand the phase rule and terms involved in it.
	CH-332: Inorganic Chemistry	CO1.Differentiate AO's and M.O's, BMO and ABMO, VBT and MOT
		CO2.Draw of molecular orbital and calculate bond order and explain stability.
		CO3.Know the various types of Ligands and meaning of the terms used in co-ordination chemistry
		CO4.Classify the various types of isomerism.
		CO5.Explain different complexes, electro neutrality principle and multiple bonding
		CO6.Know Strong field and weak field splitting, calculation of CFSE and evidence of CFSE.
	CH-333: Organic Chemistry	CO1.Compare the strength of organic acids and Bases
		CO2.Draw the conformational isomers and compare its stability.
		CO3.Understand stereochemistry of substitution reactions
		CO4.Learn the mechanism of nucleophilic and Electrophilic substitution reactions
		CO5.Compose synthetic applications of some important synthetic reagents
	CH-333: Organic Chemistry	CO6.Understand the Retrosynthetic analysis
	CH-334: Analytical Chemistry	CO1.Understand the principles of common ion effect and solubility product
		CO2.Conceptual understanding of electro gravimetric principle.
		CO3.Explain methods of thermos gravimetric analysis.
		CO4.Demonstrate the applications of Spectrophotometric analysis.
		CO5.Apply different analytical techniques for analysis.
		CO6.Understand the efficiency of solvent extraction.
	CH-335: Industrial Chemistry	CO1.Memorize the modern approach to chemical industry.
		CO2.Describe the scope of agrochemicals.
		CO3.Discuss the preservation and processing of foods.
		CO4.Names the Fuels and eco-friendly fuels and use of solar energy.
		CO5.Understand nutritive aspects of food constituents
		CO6.Recognize importance of different industries.
	CH-336-E Agriculture Chemistry	CO 1. Know the role of agriculture chemistry and its potential
		CO 2. Understand basic concept of soil, properties of soil & its classification on the basis of pH
		CO 3. Know the different plant nutrients, Their functions and deficiency symptoms
		CO 4. Understand importance of manures as compared to chemical fertilizers'
		CO 5. Understand the importance of green manuring



T. Y. B. Sc		CO 6. Have the knowledge of the use of proper the plants
	<b>Semester - IV</b>	
	CH-341: Physical Chemistry	CO1 What is mean by Electrochemical cell with specific example
		CO2. Origin of EMF of electrochemical cell.
		CO3.Distinguish between crystalline and amorphous solids / anisotropic and isotropic solid
		CO4 Explain the term crystallography and laws of crystallography
		CO5. Derivation of time independent Schrodinger wave equation.
		CO6. Wave function and its Interpretation
	CH-342: Inorganic Chemistry	CO1. The meaning of term f-block elements, Inner transition elements, lanthanides, actinides.
		CO2. Electronic configuration of lanthanides and actinides.
		CO3. Oxidation states of lanthanides and actinides and common oxidation states.
		CO4. Separation lanthanides by modern methods.
		CO5. Lanthanide contraction and effects of lanthanide contraction on post-lanthanides.
		CO6. Use of lanthanide elements in different industries.
	CH-343: Organic Chemistry	CO 1. Definition and formation of carbanions
		CO 2. Possible mechanism of some known name reactions involving carbanions
		CO 3. Various steps involved in the synthesis of some molecules
		CO 4. What is the interaction of radiation with matter
		CO 5. Types of energy levels with diagram
		CO 6. Brief idea about the advantages of spectroscopic methods
	CH-344: Analytical Chemistry	CO 1. Principles of solvent extraction.
		CO 2. Difference between KD and D
		CO 3. Technique and applications of- Column Chromatography.
		CO 4. Technique and applications of- Thin layer Chromatography
		CO 5. Advantages of supercritical fluid chromatography
		CO 6. Difference between Nephelometry and Turbidimetry
	CH-345: Industrial Chemistry	CO 1. Classification of polymerization reactions,
		CO 2. Thermodynamic and transport properties of polymer,
		CO 3. Commercial polymers and their importance,
		CO 4. Importance of sugar industry,
		CO 5. Manufacturing of ethyl alcohol by using molasses.
		CO 6. Consumption (plantation white) sugar with flow diagram.





	CH-346-E Dairy Chemistry	CO 1. Knowing importance of the subject from the point of rural economy.
		CO 2. Knowing the composition of milk, its food & nutritive value
		CO 3. Understanding the Microbiology of the milk
		CO 4. Understanding various preservation and adulterants, various milk proteins and their role for the human body.
		CO 5. Knowing various milk products, their composition, manufacture and uses.
	CH-347: Physical Chemistry Practicals	CO1 To determine the specific refractivity's of the given liquids A and B and their mixture and hence determine the percentage composition their mixture C. C
		CO-2 To determine the molecular refractivity of the given liquids A, B, C and D.
		CO-3 To determine the order of reaction for the oxidation of alcohol by potassium dichromate and potassium permanganate in acidic medium calorimetrically
		CO-4 Simultaneous determination of $\text{Cu}^{2+}$ and $\text{Ni}^{2+}$ ions by colorimetry/spectrophotometry method
	CH-348: Inorganic Chemistry Practicals	CO-1 Estimate of Fe as $\text{Fe}_2\text{O}_3$ Gravimetrically.
		CO-2 Estimate of Ba as $\text{BaSO}_4$ using homogeneous precipitation method.
		CO-3 Estimate of Nickel as Ni –DMG Gravimetrically
		CO-4 Analyse of sodium bicarbonate from mixture by thermal decomposition method.
	CH-349: Organic Chemistry Practicals	CO-1 Systematic working skill in laboratory will be imparted in student
		CO-2 Learn the basic principles of green and sustainable chemistry
		CO-3 Synthesis of various organic compounds through greener approach
		CO-4. Functional group interconversions and structural problems using chemical reactions
		Semester - I
	CCTP-1 Physical Chemistry-I	CO1: Represent of the rate law of the elementary and chain reaction
		CO2: Understand of the theories for the determination of the rate of the reactions
		CO3: Understand of the kinetics of the explosive photochemical and unimolecular reactions
		CO4: Understand of the laws of thermodynamics and their applications CO5: know the phase diagram of single component systems and binary mixture
	CCTP-2 Inorganic Chemistry-I	CO1. Understand the details of molecular symmetry including symmetry elements, operations and symmetry point groups.
		CO2. Use of group theory to recognize and assign symmetry characteristics to molecules.
		CO3. Understand the mathematical basics needed for group theory, including matrices, reduction formula, reducible and irreducible representations.
		CO4. Apply group theory in valence bond theory treatment of structure and bonding.
		CO5. Apply group theory in molecular orbital theory treatment of bonding and structure.
		CO6. Apply group theory to predicting concerted organic reactions.



M. Sc. -I (CBCS)

CCTP-3 Organic Chemistry-I	CO1. Predict the reactivity of an organic compound from its structure.
	CO2. Develop basic skills for the multi-step synthesis of organic compounds.
	CO3. Know the different aromatic substitution processes and their application to heteroaromatic systems.
	CO4. Describe synthetically the processes relevant organic-chemical reactions and be able to discuss the mechanism of these reactions.
CBOP-1	Elective Option-A: Introduction to Solid State of Matter
	CO 1. Bonding in solids – band theory
	CO 2. Electronic conductivity
	CO 3. Semiconductors, photoconductivity
	4. Non-stoichiometry, defects and types of defects in solids
	Elective Option-A: Inorganic Chemistry-Material Analysis, Synthesis and Applications
	CO1. Perform gravimetric and volumetric analysis for ores and alloy.
	CO2. Analyze binary mixtures by gravimetric and volumetric method.
	CO3. Synthesize the metal complexes and find out the percentage purity.
	CO4. Understand and Perform ion exchange chromatographic technique for separation of metal ion.
CBOP-1 (CHG-190)	
CCPP-1 CHP-107 Basic Practical Chemistry-I	CO 1. Students are trained to different purification techniques in organic chemistry like recrystallization, distillation, steam distillation and extraction.
	CO 2. Students are made aware of safety techniques and handling of chemicals.
	CO 3. Students are made aware of carrying out different types of reactions and their workup methods.
	CO 4. This practical course is designed to make student aware of green chemistry and role of green chemistry in pollution reduction.
Semester - II	
CCTP-4 (CHP- 210) Physical Chemistry - II	CO1: Understand of the principle of Microwave, IR, Raman, Electronic, NMR, ESR and Mossbauer spectroscopy
	CO2: Draw of the schematic Microwave, IR and Raman spectrum of di and triatomic molecules based on the selection rules.
	CO3: Understand of decay kinetics and measurement of radioactivity
	CO4: get knowledge of types of nuclear reactors
	CO5: study the applications of radioactivity, Understand Radiolysis and radicals
CCTP-5 (CHI -230) Inorganic Chemistry -II	CO1.Understand the fundamental principles of main group organometallic chemistry.
	CO2.Able to use Crystal Field Theory to understand the magnetic properties of coordination compounds.
	CO3.Able to describe the stability of metal complexes by the use of formation constants.
	CO4.Able to recognize the types of isomers in coordination compounds.
	CO5.Familiarization with some applications of coordination compounds.
	CO6.Understand how metal ions interact with biological environments and how these interaction influences the properties of metal centers.



	CCTP-6 (CHO-250) Organic Chemistry-II	CO3. Know the reagents that causes selective and complete reduction
		CO4. Interpret <sup>1</sup> H NMR, <sup>13</sup> C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
		CO5. Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations
		such as orbital hybridization, hyperconjugation, and resonance stabilization.
		CO6. Describe stereochemical problems in relation to chemical transformations.
	CBOP-2 (CHG-290)	
		<b>Elective Option-A: Material Characterization Technique</b>
		CO 1. Valence electron count, back bonding in organometallics, spectral characterization of organometallic compounds.
		CO 2. Catalytic reaction involving organometallic compounds and mechanism of these reactions
		CO 3. Types of reaction involving organometallic compounds
		<b>Elective Option-A: Electroanalytical Techniques of Analysis</b>
		CO1. Apply a fundamental understanding of the tools of optical spectroscopy.
		CO2. Demonstrate an understanding of the interactions of electromagnetic radiation with matter in the analysis of papers from the current scientific literature.
		CO3. Demonstrate a basic understanding of a range of state-of-the-art spectroscopic techniques that will be surveyed in the latter part of the course.
		CO4. Able to explain the principles of the most important liquid and gas chromatography as well as electro-migration techniques;
	CCPP-2 CHP-227 Basic Practical Chemistry-II	
		CO 1. Students are trained to different purification techniques in organic chemistry like recrystallization, distillation, steam distillation and extraction.
		CO 2. Students are made aware of safety techniques and handling of chemicals.
		CO 3. Students are made aware of carrying out different types of reactions and their workup methods.
		CO 4. This practical course is designed to make student aware of green chemistry and role of green chemistry in pollution reduction.
	<b>Semester - III</b>	
		CO1: Understand various methods of Carbanion generation and their applications in Organic Synthesis and mechanisms in biological reactions that will help students to understand Nature better.
		CO2: differentiate between various organic reactive intermediates and correlate the reaction mechanisms with practical procedures.
		CO1: understand how to interpret nuclear magnetic resonance spectrum.
		CO2: know how to solve problems based on <sup>1</sup> H and <sup>13</sup> C NMR
		CO3: know applications of mass spectroscopy in determination of structures.
		CO4: understand methods of solving combines problems on all spectroscopic techniques.



M. Sc.- II Organic Chemistry

CHO-352 Organic Stereochemistry & Asymmetric Synthesis	CO1: understand various terminologies in stereochemistry.
	CO2: will be able to draw the stereochemical structures of different molecules.
	CO3: understand the isolation of racemic mixtures.
	CO4: draw various organic reactive intermediates with stereochemistry.
CHO - 353 Pericyclic reactions, Photochemistry and Heterocyclic Chemistry.	
	CO1: understand various Pericyclic and photochemical reactions and rearrangements.
	CO2: understand and write mechanism of reactions and their applications.
	CO3: understand how to synthesize five, six and seven-membered heterocycles.
	CO4: utilize their knowledge in practical's for various heterocyclic and photochemical conversions.
<b>Semester - IV</b>	
CHO - 450 Course Name: Chemistry of Natural products	
	CO1: Industrial applications of Natural Products.
	CO2: become familiar with many reagents used in organic synthesis and develop interest in Biogenesis of naturally occurring essential compounds.
	CO3: understand nature better by studying mechanisms in biological reactions and different Secondary metabolites and their importance.
CHO - 451 Organometallic Reagents in organic Synthesis	
	CO1: Industrial applications of organometallic compounds in organic reactions
	CO2: Mechanisms of organometallic reactions.
	CO3: Stereochemistry of the organometallic reactions.
CHO - 452 Concept and applications in Medicinal Chemistry	
	CO1: understand the stereochemistry of carbohydrates and their reactions.
	CO2: understand the concept of chiral templates and chiral drugs
	CO3: understand the synthesis of various drugs.
	CO4: understand the mode of action of different anti-fungal, anti-bacterial and anti-viral drugs.
ORGANIC PRACTICALS-CHO-354	
	CO1: To learn. Stoichiometric calculation of the reaction
	CO2: To understand importance of mole ration ratio of the reagents
	CO3: To understand different types of name reactions
	CO5: To learn the purification of the products from their crude mixture
	CO6: To identify the functional groups of the products using spectral data and chemical tests
ORGANIC PRACTICAL-CH 453	
	CO1: Understand and employ concept of type determination and separation
	CO2: To meticulously record physical constants
	CO3: To Perform micro scale chemical elemental analysis



		CO4: To Perform qualitative estimation of functional groups
		CO5: To Recrystallize /distill the separated compounds
		CO6: To Extend these skills to organic synthesis
	ORGANIC PRACTICAL-CHO-454	
		CO1: To learn. How to carried out micro-scale experiments
		CO2: Students must read MSDS and should handle chemicals and reactions accordingly
		CO3: Students should learn how to monitor reactions using alumina coated TLC plates
		CO5: To Perform qualitative estimation of functional groups
		CO6: To Recrystallize /distill the separated compounds
		CO6: To Extend these skills to organic synthesis
	<b>Semester - III</b>	
		<b>Electrochemical and Thermogravimetric Methods of chemical analysis.</b>
	CHA-390	CO -1 Define various terms in electrochemistry and Thermogravimetry.
		CO -2 Explain instrumentation in electrochemistry and Thermogravimetry.
		CO -3 Describe basic principles of electrochemistry and Thermogravimetry.
		CO -4 Explain applications of electrochemistry and Thermogravimetry in industry & in analytical laboratory.
		CO -5 Select particular method of analysis for sample to be analyzed.
		CO -6 Solve numerical problems on electrochemistry and Thermogravimetry.
		CO-7 Interpret polarogram, cyclic voltammogram, pulse polarogram, Thermogram differential thermogram and DSC thermogram.
		CO -8 Differentiate among the various methods of electrochemistry and Thermogravimetry.
	CHA-391	<b>Analytical Method Development and Extraction Techniques</b>
		CO- 1. Understand various terms in analytical extraction and method Development and validation.
		CO- 2. Explain instrumentations and methodology in analytical extraction.
		CO- 3. Describe basic principles of analytical extraction method development and validation.
		CO- 4. Explain applications analytical extraction and method development
		and validation in industry and in analytical laboratory.
		CO- 5. Apply / select particular method of analysis for sample to be analyzed.
		CO- 6. Solve numerical problems on analytical extraction and method development and validation.
		CO- 7. Develop analytical method for analysis of given sample. Apply statistical treatment to the analytical data.
		Select appropriate parameters for the development of analytical method
		CO- 8. Differentiate among the methods of analytical extraction.
		<b>Advanced Chromatographic Methods of Analysis</b>
		CO-1. Define / understand various terms in chromatography (GC and HPLC) and mass spectroscopy.



	CHA- 392	CO-2. Explain instrumentations in chromatography (GC and HPLC) and mass spectroscopy.
		CO-3. Explain / describe i) basic principles of chromatography (GC and HPLC) and mass spectroscopy. ii) separation in GC / HPLC column. iii) Functioning and construction of GC / HPLC/ MS detectors.
		CO-4. Explain /Describe applications chromatography (GC and HPLC) in industry and in analytical laboratory.
		CO-5. Apply / select particular method / instrumental parameters for analysis for sample GC / HPLC.
		CO-6. Solve numerical problems on chromatography (GC and HPLC) and mass spectroscopy.
		CO-7. Integrate GC and HPLC chromatogram, Mass spectrum
		CO-8. Differentiate among the chromatography (GC and HPLC) methods of analysis.
	CHA-393A	<b>Advanced Chromatographic Methods of Analysis</b>
		CO -1. Define / understand various terms in Electrophoresis, capillary electrophoresis, HPTLC, Body fluid analysis, ELISA, RIA.
		CO -2. Explain instrumentations in in Electrophoresis, capillary electrophoresis, HPTLC, Body fluid analysis, ELISA, RIA.
		CO -3. Explain / describe i) basic principles of chromatography (GC and HPLC) and mass spectroscopy. ii) Separation in GC / HPLC column. iii) Functioning and construction of GC / HPLC/ MS detectors.
		CO -4. Explain /Describe applications chromatography (GC and HPLC) in industry and in analytical laboratory.
		CO -5. Apply / select particular method / instrumental parameters for analysis for sample GC / HPLC.
		CO -6. Solve numerical problems on chromatography (GC and HPLC) and mass spectroscopy.
		CO -7. Integrate GC and HPLC chromatogram, Mass spectrum
		CO -8. Differentiate among the chromatography (GC and HPLC) methods of analysis.
	CHA-394 (Practical- I)	<b>Basics of Instrumental Methods of Chemical Analysis</b>
		CO- 1. Maintain proper record of analytical data in notebook. Observer personal safety in laboratory and able handle all chemicals, instruments, etc. safely in laboratory.
		CO -2. Define / understand various terms involved practical methods of quantitative analysis.
		CO- 3. Explain instrumentations of colorimeter, spectrophotometer, photoflurometer, TGA, HPLC, GC, Flame-photometer, CV, AAS, etc.
		CO- 4. Explain / describe basic principles of chromatography different instrumental methods of analysis.
		Able to handle particular instrument according to SOP.
		CO- 5. Design / modify and validate new analytical method for chemical analysis of particular sample.
		CO- 6. Apply / select particular method / instrumental parameters for analysis of given sample.
		CO- 7. Give mathematical treatment to analytical data and able to interpret the results accurately.
		CO- 8. Verify theoretical principle practically or apply theory to explain practical observations.
		CO- 9. To conclude the results able to take the decision regarding quality of sample.
	CHA- 490	<b>Semester - IV</b>
		<b>Advanced Analytical Spectroscopic Techniques</b>
		CO- 1. Define / understand various terms in atomic absorption, atomic emission, fluorescence, ESR and electron spectroscopy.
		CO-2. Explain instrumentation of atomic absorption, atomic emission, ICPAES, ICPAES-MS, fluorescence, ESR and electron spectroscopy.
		CO- 3. To describe basic principles of atomic absorption, atomic emission, ICPAES, ICPAES-MS, fluorescence, ESR and electron spectroscopy.





M. Sc. - II Analytical Chemistry	CHA- 490	CO- 4. Select appropriate methods for sample treatment in AAS / AES, ICPAES, ICPAES-MS.
		CO-5. Explain advantages of ICPAES-MS over AES spectroscopy, fluorescence spectroscopy.
		CO-6. Solve numerical problems on analysis all these spectroscopic methods.
		CO-7. Interpret ESR spectra, super hyperfine splitting and g value in ESR, and parameters affecting it.
		CO-8. Calculate theoretical parameters from ESR data and characterize compound.
		CO-9. Solve problems based on atomic absorption, atomic emission, ICPAES, ICPAES-MS, fluorescence, ESR and electron spectroscopy.
	CHA- 491	<b>Chemical Methods of Pharmaceuticals Analysis</b>
		CO-1. Define / understand various terms in pharmaceutical raw material and finished product analysis.
		CO-2. Explain various pharmaceutical dosage forms and types of raw materials used.
		CO-3. To describe basic principles of methods of pharmaceutical analysis according to IP.
		CO-4. Explain importance particular test in pharmaceutical raw material and finished product analysis.
		CO-5. Perform and explain importance of limit tests, identification tests and microbiological limit test of raw materials and finished products.
		CO-6. Solve numerical problems on analysis pharmaceutical raw material and finished product analysis.
		CO-7. Interpret IR spectra, HPLC chromatogram, UV-Visible spectra of pharmaceutical materials.
		CO-8. To perform total analysis of pharmaceutical raw material and finished product analysis according to IP / BP / USP.
		CO-9. Standardize analytical instruments according IP /BP/ USP.
		CO-10. Take a decision on the basis of analytical results regarding quality of raw materials so that material can be accepted for production or rejected.
	CHA-492 B)	<b>Analytical Chemistry of agriculture, Polymer and Detergents</b>
		CO-1. Define / understand various terms in soil analysis, pesticide residue analysis, detergent analysis and polymer analysis.
		CO-2. Explain / describe techniques / methods of soil analysis, pesticide residue analysis, detergent analysis and polymer analysis.
		CO-3. To describe basic principles techniques / methods soil analysis, pesticide residue analysis, detergent analysis and polymer analysis.
		CO-4. Explain importance of soil analysis, pesticide residue analysis, detergent analysis and polymer analysis.
		CO-5. Choose suitable method / techniques to characterize quality of soli polymer and detergent.
		CO-6. Describe / explain results of analysis soil, pesticide residue, detergent and polymer.
		CO-7. Solve numerical problems on analysis soil, pesticide residue, detergent and polymer.
		CO-8. Draw conclusion regarding soil, detergent and polymer quality from analytical results.
	CHA-493 A) Practical	<b>Optional Analytical Chemistry Practical</b>
		CO-1. Maintain proper record of analytical data in notebook. Observer personal safety in laboratory and able handle all chemicals, instruments, etc. safely in laboratory.
		CO-2. Define / understand various terms involved practical methods of quantitative analysis.
		CO-3. To analyze organic and inorganic materials using appropriate chemical / instrumental methods
		CO-4. Explain / describe basic principles of chemical / instrumental methods used for analysis. Able to handle particular instrument according to SOP.
		CO-5. Perform analysis of sample with described procedure. Able to handle analytical instruments.
		CO-6. Apply / select particular method / instrumental parameters for analysis of given sample.



		CO-7. Maintain appropriate reaction conditions as described in procedures.
		CO-8. To perform i) selective analysis of particular component from sample. ii) Analysis at trace level from sample.
		CO-9. To conclude the results able to take the decision regarding quality of sample.
		CO-10. To perform calculations and interpret the results.
	CHA- 493 B)	<b>Project</b>
		CO-1. Maintain proper record of analytical data in note book for research purpose.
		CO-2. Perform review of literature related to the topic of project work and design the problem for project work.
		CO-3. Decide and describe methodology for problem to solve proposed problem in the form of project. Decide and perform application of research work.
		CO-4. To design experiment for research work. Collect the resources, design small equipment, etc. for completion of research work.
		CO-5. Collect experimental data (raw data) and analyze the data in the perspective of problem. Present data in graphical forms for the conclusive results.
		CO-6. Use computer as a tool for result analysis, presentation and writing the project.
		CO-7. To obtain concrete conclusion from the results on the basis of reported theory / research work and analytical results.
		CO-8. To perform report writing, scientifically.
		CO-9. To write research project / paper in scientific manner.
	CHA- 494	<b>Applied Analytical Chemistry Practical</b>
		CO-1. Maintain proper record of analytical data in notebook. Observer personal safety in laboratory and able handle all chemicals, instruments, etc safely in laboratory.
		CO-2. Define / understand various terms involved practical methods of quantitative analysis.
		CO-3. To analyze organic and inorganic materials using appropriate chemical / instrumental methods
		CO-4. Explain / describe basic principles of chemical / instrumental methods used for analysis. Able to handle particular instrument according to SOP.
		CO-5. Perform analysis of sample with described procedure. Able to handle analytical instruments.
		CO-6. Apply / select particular method / instrumental parameters for analysis of given sample.
		CO-7. Maintain appropriate reaction conditions as described in procedures.
		CO-8. To perform i) selective analysis of particular component from sample. ii) Analysis at trace level from sample.
		CO-9. To conclude the results able to take the decision regarding quality of sample.
		CO-10. To perform calculations and interpret the results.
	<b>DEPARTMENT OF MICROBIOLOGY</b>	
	<b>Programme Outcomes (POs) B. Sc.</b>	
		Students of the B.Sc. Microbiology programme will learn to use scientific logic as they explore a wide range of contemporary subjects spanning various aspects of basic microbiology such as Bacteriology, Virology, Biochemistry, Microbial Physiology, Immunology, Cell Biology, Molecular Biology, Genetics, Systems Biology, Immunology and Molecular biology, in addition to becoming aware of the applied aspects of microbiology such as Industrial Microbiology, Food and Dairy Microbiology, Environmental Microbiology and Medical Microbiology to name just a few.
		Students will appreciate the biological diversity of microbial forms and be able to describe/explain the processes used by microorganisms for their replication, survival, and interaction with their environment, hosts, and host populations. They will become aware of the important role microorganisms play in maintenance of a clean and healthy environment. They will learn of the role of microorganisms in plant, animal and human health and disease.



PO3		Students will gain knowledge of various biotechnological applications of microorganisms and will learn of industrially important substances produced by microorganisms. They will gain familiarity with the unique role of microbes in genetic modification technologies.
PO4		Students will become familiar with scientific methodology, hypothesis generation and testing, design and execution of experiments. Students will develop the ability to think critically and to read and analyze scientific literature.
PO5		Students will acquire and demonstrate proficiency in good laboratory practices in a microbiological laboratory and be able to explain the theoretical basis and practical skills of the tools/technologies commonly used to study this field.
PO6		Students will develop proficiency in the quantitative skills necessary to analyze biological problems (e.g., arithmetic, algebra, and statistical methods as applied to biology)
PO7		Students will develop strong oral and written communication skills through the effective presentation of experimental results as well as through seminars.
PO8		Graduates of the B.Sc. Microbiology programme will be informed citizens who can understand and evaluate the impact of new research discoveries in the life sciences, and will be able to pursue a wide range of careers, including biological and medical research in higher education institutions as well as careers in public and global health, scientific writing, environmental organizations, and food, pharmaceuticals and biotechnology industries.
PO9		Microbiology is a branch of science that studies “life” taking an example of microorganisms such as bacteria, protozoa, algae, fungi, bacteria, viruses, etc. These studies integrate cytology, physiology, ecology, genetics and molecular biology, evolution, taxonomy and systematics with a focus on microorganisms; in particular bacteria.
PO10		Apply basic concepts/ theories of Life Sciences for solving current scientific and social issues in key fields such as agriculture, environment, human health, transgenic animals, GMOs and plant disease management
<b>Programme Specific Outcome (PSOs) B. Sc.</b>		
PSO1		Identify and classify microorganisms using various microbial techniques. Gain knowledge on microbial diversity in different environments.
PSO2		Understand the principles used in pathogen detection and different diagnostic tools for their identification.
PSO3		Mastering the skills of handling microorganisms, hands on training for accessing the information technology in computers and its applications in identifying the organisms using bioinformatics tools.
PSO4		Appreciate the versatility and significance of microorganisms in the various fields such as Agriculture, Pharmaceuticals, Medical, Food, Dairy and Fermentation technology, Immunodiagnostics
PSO5		Develop the different research / entrepreneurship skills in industries to understand the significance of research in Microbiology.
<b>CLASS</b>		<b>Course Outcomes (COs)</b>
F.Y.B.Sc.	Introduction to Microbiology Paper I.	CO 1. The course aids in basic understanding of the genesis of Microbiology with emphasis on various great discoveries, golden era in microbiology, the efforts of great microbiologists.
		CO 2. The scope of Microbiology in the different fields with thrust on the applications of microorganisms of ancient and advanced periods.
		CO 3. The characterization of various groups of microorganisms based on morphology and reproduction using Bergey manual for bacteria and viruses by ICTV.
		CO 4. Detailing the cytology of microorganisms with respect to ultra structure to be used in identification.
		CO 5. Analysis of the role of biological chemicals in cell by understanding the types, functions with examples.
	Basic Techniques in Microbiology Paper II	
		CO 1. Awareness of bio safety, containment, asepsis and their role in microbiology laboratories.
		CO 2. Knowledge of the measurements used in microbiology in terms of micrometry, units, conversions.
		CO 3. Understanding the principles of basic microscopy, use of different types of microscopes, care & maintenance in handling



		microscopes.
		CO 4. Knowledge of the stains used in study of microorganisms, staining methods, role of different stains and theories of staining.
		CO 5. Learning of the methods of sterilization, disinfection, mechanisms of each agent, testing the disinfectant. efficiency
		CO 6. Assessment of the requirements of growth, nutrients, media ingredients, media preparation, enrichment methods, pure culture isolation methods, identification & special cultivation methods for each group of microorganisms.
		CO 7. Study of the principles of general growth, compare the different types of growth, measurement methods with emphasis on industry.
	Practical course: Paper-III	CO 1. Learning of the general instructions of safety in microbiology, discuss the need of micro-aid box.
		CO 2. Skills for handling instruments of microbiology laboratory with care & maintenance, creation of SOPs.
		CO 3. Skills for handling different types of microscopes and learn the design, functioning and maintenance.
		CO 4. Collection of samples for identification of the microorganisms from natural habitats and characterize morphologically, staining & motility.
		CO 5. Enumeration of the bacteria, fungal cells & their spores by Neubauer chamber method.
		CO 6. Knowledge of aseptic transfer techniques.
		CO 7. Preparation of media for cultivation of microorganisms and perform media sterilization and checking its efficiency, to study the growth characters on different media.
		CO 8. Learning of the pure culture isolation methods by streak, spread, pour plate method after serial dilution of the given soil sample.
		CO 9. Enrichment of the soil microorganisms using Winograd Skys column, enrichment media.
		CO 10. Demonstration of the methods of disinfection and check the effect of disinfectants on skin microflora.
		CO 11. Learning of the method of phenol co-efficient method.
		CO 12. Assessment of the optimization of the growth conditions and to test the effect of each factor at different limits.
S.Y.B.Sc.	(MB-211 Medical Microbiology & Immunology	CO 1. Definitions of incubation period, pathogenesis etc.
		CO2. Study of pathogens with respect classification, morphological, cultural and biochemical characters.
		CO 3. To study of introduction to chemotherapy
		CO 4. Study of immunity and formation of blood cells
		CO 5. To study about antigen and antibodies
		CO 6. Study of immunohematology and active and passive immunization.
	(MB-212Bacterial Physiology and fermentation technology	CO 1. To study of Enzymes.
		CO 2. To understand about bacterial physiology
		CO 3. To study about concept of fermentation technology
		CO 4. To study about design of fermenter.
	(MB-221) Bacterial genetics	CO 1. Study of DNA, structure of DNA, and Replication of DNA
		CO 2. To study of gene expression and mutation and reversion.
		CO 3. Study about plasmid genetics.
	(MB-222) Air, Water, Soil Microbiology	CO 1. To study of air microflora and methods of air sampling.
		CO 2. To study of type of water and standard quality of water .and bacterial analysis of water for potability.
		CO 3. To study of soil microbiology.
	(MB 213) Practical course: sem I	CO 1. To study of blood grouping and biochemical characterization of bacteria.
		CO 2. Isolation and identification of bacteria.
		CO 3. To study of air microflora and methods of air sampling.



(MB 223) Practical course: sem II		CO 4. To study of type of water and standard quality of water .and bacterial analysis of water for potability.
		CO 5. To study of soil microbiology.
T Y. B Sc.	MB331 Medical Microbiology I,	CO 1. Study about Introduction to infectious diseases of human body systems,
	MB341 Medical Microbiology II	CO 2. Epidemiology.
		CO 3. To Study of groups of bacterial Pathogens.
		CO 4. Understand Chemotherapy.
		CO 5. Study about Introduction to cultivation of viruses, Study groups of viral Pathogens.
		CO 6. To Study groups of parasites
		CO 7. To Study groups of <i>Candida and Non - Candida</i> .
	MB-332 Genetics and Molecular Biology. I	CO 1. Study of Gene Linkage and crossing over.
	MB- 342 Genetics and Molecular Biology. II	CO 2. DNA Replication. Prokaryotic and Eukaryotic Translation. Prokaryotic and Eukaryotic Translation.
		CO 3. To understand Guidelines for gene manipulation
		CO 4. Study the Technique used in recombinant DNA technology. Gene transfer by transformation. Gene transfer by transduction.
		CO 5. Gene transfer by conjugation. DNA damage and repair.
		CO 6. Recombination and Mutants in Bacteriophages.
		CO 7. To Understand tools of Recombinant DNA technoogy.
	MB-333 Enzymology	CO 8. Generation of Recombinant DNA molecule.
		CO 1. To study Enzymes, Structure of Enzymes, Role of cofactors in metabolism.
		CO 2. Enzyme assays.
		CO 3. Understand Principles and Methods of Enzyme purification.
		CO 4. To study Enzyme Kinetics.
		CO 5. Metabolic Regulations
		CO 6. Immobilization of enzymes.
	MB-343 Metabolism	CO 1. To study Membrane transport mechanisms.
		CO 2. Bioenergetics.
		CO 3. Biosynthesis and Degradation.
		CO 4. Bacterial Photosynthesis.
	MB - 334 Immunology I	CO 1. Study About Immunity.
	MB -344 Immunology II	CO 2. Formation of blood cell.
		CO 3. Organs of immune system.
		CO 4. innate immunity Nonspecific mechanism of defense
		CO 5. Antigen.
		CO 6. Immunoglobulins
		CO 7. Adaptive / Acquired Immunity.
		CO 8. To understand Transplantation and Immunity.
		CO 9. Major Histocompatibility complex.
		CO 10. Cytokines
		CO 11. Antigen-Antibody Interactions




		CO 12. Immunohematology
		CO 13. Public health immunology.
		CO 14. Hypersensitivity
		CO 15. To study Hybridoma Technology and Monoclonal Antibodies.
	MB-335 Fermentation Technology I	CO 1. Study the Strain Improvement.
	MB - 345 Fermentation Technology II	CO 2. Media Optimization.
		CO 3. Sterilization Of media
		CO 4. Scale up and scale down
		CO 5. To understand Principles and Methods of downstream Processing.
		CO 6. Study about Quality assurance of fermentation Product.
		CO 7. To Understand Fermentation Economics.
		CO 8. Introduction to solid state fermentation submerged fermentation. Large Scale production of - a) Primary Metabolites. b) Secondary Metabolites c) Enzymes d) Microbial transformation of steroids. e) Biomass based products. f) Milk Products g) vaccines h) Immune sera
	MB -336 Food and dairy Microbiology	CO 1. To understand Dairy Development in India.
		CO 2. Milk Chemistry and constituent 3 Microbiology of Milk
		CO 3. To study technics Preservation of Milk by Pasteurization & its storage
		CO 4. Microbial analysis of milk
		CO 5. To study Classification of Foods based on stability
		CO 6. Food spoilage
		a. Chemical and physical properties of food affecting microbial growth
		b. Sources of food spoilage micro-organisms
		CO 7. Study about Food preservation
		CO 8. Microbial food poisoning and food infection
		CO 9. Fermented foods
		CO 10. Applications of genetically modified microorganisms
		CO 11. Food Sanitation and regulation
	MB-346: Soil And AGRICULTURAL MICROBIOLOGY	CO 1. Study about Agriculture Technology
		CO 2. a Plant growth improvement b Methods of plant disease control
		CO 3. To understand about Biochemistry and production of bio-fertilizers
		CO 4. Study about Bioremediation and Waste Water Treatment Bioleaching
		CO 5. Introduction to Nanobiotechnology
		CO 6. Microbial Biosensors and Biochips in Environmental Monitoring
		CO 1. Screening and isolation of pesticide degrading microorganisms from soil.
		CO 2. Isolation and identification of lactic cultures up to genus level
		CO 3. Laboratory scale fermentation, estimation, product recovery and yield calculation of ethanol / organic acid (any one)
		CO 4. Quality assurance tests:
		a. Antibiotic and growth factor assay (agar gel diffusion technique)
		b. Sterility testing of non-biocidal injectables
		CO 5. MIC and MBC of Antibacterial compounds





	MB – 347: PRACTICAL COURSE – I APPLIED MICROBIOLOGY	CO 6. Tests for Milk and Dairy products
		CO 7. Enrichment, Isolation, Preparation and Application of Bioinoculants
		CO 8. Isolation and identification of <i>Xanthomonas</i> spp. from infected sample
		CO 9. Isolation and identification of <i>Aspergillus</i> spp. from onions infected with Black Mould
		CO 10. Antifungal activity of Lactic acid bacteria.
		CO 11. Microscopic examination of Fungi causing Rust and Smut infections in Plants
		CO 12. Dye removal from wastes by dead microbial Biomass
		CO 13. Biosynthesis of nanoparticles
	MB – 348: PRACTICAL COURSE – II	CO 1. Determination of absorption spectra and molar extinction co-efficient
	BIOCHEMISTRY AND Genetics	CO 2. Clinical Biochemistry - Estimations of:
		a. blood sugar
		b. blood urea
		c. serum cholesterol
		d. serum proteins and albumin
		CO 3. Qualitative analytical tests for proteins and carbohydrates
		CO 4. Preparation of buffers
		CO 5 Paper chromatography
		CO 6. Quantitative biochemical techniques:
		a. Estimation of total carbohydrates by Phenol-sulfuric acid method
		b. Estimation of reducing sugar by DNSA method
		c. Estimation of proteins by Folin Lowry method
		CO 7. Enzyme production:
		a. Screening of amylase producing organisms
		b. Production of amylase using these isolates
		c. Precipitation of amylase from fermentation broth
		d. d. Determination of specific activity of crude and purified amylase
		CO.8Isolation and enumeration of bacteriophages and study of phage morphology
		CO 9 Genomic (bacterial) DNA isolation and detection
		CO 10 Isolation of plasmid DNA and gel electrophoresis (demonstration)
		CO 11 Transformation of <i>E. coli</i> and selection of recombinants
	MB - 349 : Practical Course -III	CO 1. Clinical Microbiology
	Diagnostic Microbiology & Immunology	CO 2. Isolation & Identification of Pathogen from clinical sample
		CO 3. Hematological test
		CO 4. Agglutination test
		CO 5. Immuno precipitation
		CO 6. Epidemiology survey
Department of Zoology		
Programme Outcomes (POs)		
		PO1: Demonstrate and apply the fundamental knowledge of the basic principles of major
		PO2: Apply knowledge to solve the issues related to animal sciences



PIMPRI CHINCHWAD EDUCATION TRUST  
WISDOM BETTER KNOWLEDGE



PO3		PO3: Take appropriate steps towards conservation of endemic and endangered animal species
PO4		PO4: To foster curiosity in the students for Zoology
PO5		PO5: To create awareness amongst students for the basic and applied areas of Zoology
PO6		PO6: To orient students about the importance of abiotic and biotic factors of environment and their conservation
PO7		PO7: To provide an insight to the aspects of animal diversity.
PO8		PO 8: Fundamental knowledge of the basic principles of major
PO9		PO 9: Abiotic and biotic factors of environment and their conservation
PO10		PO10: To inculcate good laboratory practices in students and to train them about proper handling of lab instruments.

#### Programme Specific Outcomes (PSOs)

PSO1		Acquire the knowledge of animal science, natural phenomenon, and manipulation of nature and environment by man.
PSO2		Understanding the scientific terms, concepts, facts, phenomenon and their interrelationship.
PSO3		Students followed and understood general laboratory practice guidelines, including safety
PSO4		Develop scientific attitude which is the major objective this makes the students open minded, critical observations, curiosity, thinking etc.
PSO5		Abilities to apply scientific methods, collection of scientific data, problem solving.

#### Programme Outcomes (POs) for M.Sc. Zoology

PO1		Zoology knowledge: Apply the knowledge of Zoology, Life Sciences
PO2		Subjects to the understanding of complex life processes and phenomena.
PO3		Analyse complex situations of living forms.
PO4		The cultural, societal, and environmental considerations.
PO5		Design processes/strategies that meet the specified needs
PO6		Interpretation of data, and synthesis of the information to provide valid conclusions in real situations.
PO7		Problem analysis: Identify, review research literature
PO8		Design/development of solutions: with appropriate consideration for the public health and safety.
PO9		Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analyss.
PO10		Modern tool usage: Create, select, and apply appropriate techniques, resources, and ICT tools for understanding of the subject.

#### Programme Specific Outcomes (PSOs) for M.Sc. Zoology

PSO1		Acquire the knowledge of animal science, natural phenomenon, and manipulation of nature and environment by man.
PSO2		Understanding the scientific terms, concepts, facts, phenomenon and their interrelationship.
PSO3		Students followed and understood general laboratory practice guidelines, including safety
PSO4		Develop scientific attitude which is the major objective this makes the students open minded, critical observations, curiosity, thinking etc.
		Abilities to apply scientific methods, collection of scientific data, problem solving.

#### Course

#### Course Outcome (COs)

pattern)	Animal Diversity I (ZO 111)	CO1: The student will be able to understand classify and identify the diversity of animals.
		CO2: The student understands the importance of classification of animals and classifies them effectively using the six levels of classification.
		CO3: The student knows his role in nature as a protector, preserver and promoter of life which he has achieved by learning, observing and understanding life.



	Animal Ecology (ZO 112)	CO1: The learners will be able to identify and critically evaluate their own beliefs, values and actions in relation to professional and societal standards of ethics and its impact on ecosystem and biosphere due to the dynamics in population.
		CO2: To understand anticipate, analyze and evaluate natural resource issues and act on a lifestyle that conserves nature
		CO3: The Learner understands and appreciates the diversity of ecosystems and applies beyond the syllabi to understand the local lifestyle and problems of the community
	Zoology Practical Paper (ZO 113 )	CO1: The student will be able to understand classify and identify the diversity of animals.
		CO2: The student understands the importance of classification of animals and
		CO3: The Learner understands and appreciates the diversity of ecosystems and applies beyond the syllabi to understand the local lifestyle and problems of the community
Semester 2	Animal Diversity –II (ZO 121)	CO1: To understand the differences and similarities in the various aspects of classification.
		CO2: To classify invertebrates and to be able to understand the possible group of the invertebrate observed in nature.to understand our role as a caretaker and promoter of life.
	Cell Biology (ZO122)	CO1. Study of the concepts of cell Biology.
		CO 2. Study of the scope of Cell Biology.
		CO 3. Study of cell structure and cell functions.
		CO 4. Study of broad description of bio-chemistry of cell, structure & functions of cell organelles.
		CO 5. Study of cell biology with its concern aspects scientifically.
		CO 6. Study of the cellular activities.
		CO 7. Study of significance of cell & its molecular activities.
		CO 8. Study of cancer cell & cancer-causing agents.
	Zoology Practical Paper (ZO123)	CO1: The student will be able to understand classify and identify the diversity of animals.
		CO2: The student understands the importance of classification of animals and
		CO3. Study of the concepts of cell Biology.
S. Y. B. Sc.	Animal Diversity - III (ZO – 231)	CO 1. To understand the origin and advancement of higher vertebrates (Tetrapoda).
Semester-I		CO 2. To understand general characters of different groups of higher vertebrates
		CO 3. To understand different behaviors and adaptations in higher vertebrates
		CO 4. To understand affinities among different groups of higher vertebrates.
	Applied Zoology I (ZO - 232)	CO 1. To understand the basic life cycle of the honeybees, beekeeping tools and equipment's.
		CO 2. To learn for managing beehives for honey production and pollination.
		CO 3. To understand the basic information about fishery, cultural and harvesting methods of fishes.
		CO 4. To understand fish preservation techniques.
	Zoology Practical Paper (ZO – 233)	CO 1. Learn the Museum study of Group Protochordata
		CO 2. Learn the types of tail fins in fishes
		CO 3. Learn the external characters & digestive system of locally available fish.
		CO 4. Learn the f external morphology and life-cycle of Bombyx mori.
	Animal Diversity - IV (ZO – 241)	CO 1. To understand different behaviours and adaptations in higher vertebrates
		CO 2. To understand affinities among different groups of higher vertebrates.
	Applied Zoology II (ZO-242)	CO 1. To understand the biology, varieties of silkworms and the basic techniques of silk production and harvesting of cocoons.
		CO 2. To learn the different silkworm species and their host plants.
		CO 3. To study types of agricultural pests and Major insect pests of agricultural importance
		CO 4. To study Pest control practices
	Zoology Practical Paper (ZO – 243)	CO 1. Study of external morphology, life cycle and polymorphism in Honey Bee.



		CO 2. To study Temporary mounting of mouth parts, legs, wings and sting apparatus of worker bee.
		CO 3. learn the Identification, Classification and study of habit, habitat and economic importance of a) Rohu ( <i>Labeo rohita</i> ), b) Catla ( <i>Catla catla</i> ), c) Mrigal ( <i>Cirrhinus mrigala</i> ).
T. Y. B. Sc.		
Semester III	(ZY 331) Animal Systematics	CO 1. Study of the morphology and physiology of <i>Pilaglobosa</i> and <i>Calotes versicolor</i> .
	and Diversity V (Paper I)	CO 2. Description, locomotion and nutrition of Phylum – Protozoa.
		CO 3. Description of the phylum Coelenterata and its polymorphism
		CO 4. Description of Canal System of phylum- Porifera.
		CO 5. Description of Phylum Nematoda and give examples of pathogenic Nematodes
		CO 6. Identification and study of the characters of class - Dipnoi with its example.
		CO 7. Comparative studies of Heart, Kidney, Brain and Arterial System in different vertebrates.
		CO 8. Study of the Dentition in mammals.
		CO 9. Description of the Accessory Respiratory organs in fishes.
	(ZY 332) Mammalian Histology	CO 1. Study of the epithelial, connective, nervous and muscular tissue.
	(Paper-II)	CO 2. Histological studies of the organs like- skin, tooth, tongue, alimentary canal and digestive gland, respiratory organs, blood vessels, kidney and reproductive organs.
		CO 3. Detail study of endocrine gland like pituitary, thyroid and adrenal gland.
	(ZY 333) Biological Chemistry Paper III	CO 1. Study of chemical process within living organism.
		CO 2. Study the Types of bonds and their functions in biomolecules.
		CO 2. Study the Structure of Water molecule and their Physical and Chemical Properties.
		CO 4. Study the concept of Acid and Base, pH, Sorenson's scale, derivation of Henderson-Hassel Balch equation and its application.
		CO 5. Study the concept of Buffer, Types, Buffering capacity, and buffers in biological system.
		CO 6. Much of biochemistry deals with the structures, functions and interactions of biological macromolecules.
		CO 7. Study the Carbohydrates with classification and Significance.
		CO 8. Study the Proteins with Structures and Classifications of Amino acids.
		CO 8. Study the Enzymes their Classification and Regulation.
		CO 9. Study the Lipids and their Classification and Significance.
	(ZY 334) Environmental Biology	CO1 Understanding of Basic concepts of Environmental science & its Scope.
	& Toxicology (Paper IV)	CO 2. Study of Biotic & Abiotic factors.
		CO 3. Study of types of Ecosystems, Food web/chain & Ecological Pyramid.
		CO 4. Understanding of Different Types of Environmental pollution.
		CO 5. Study of Effects of pollution on Environment & Ecosystem.
		CO 6. Study of Bio-indicators & Environmental monitoring.
		CO 7. Understanding the Environmental challenges in India.
		CO 8. Study of Toxicants & their effect.
	(ZY 335) Parasitology (Paper V)	CO 1. Study of types of parasites like endo parasites and ectoparasites.
		CO 2. Study of types of hosts like intermediate, definitive paratenic and reservoir.
		CO 3. Study of host parasite relationship.
		CO 4. Detailed study of endoparasite of <i>Plasmodium vivax</i> , <i>Entamoeba histolytica</i> , <i>Ascaris lumbricoides</i> and <i>Taenia Solium</i> .



		CO 5. Detailed study of the ectoparasite of Head louse, Tick, Mite.
		CO 6. Study of parasitological significance of Zoonosis.
		CO 7. Study of epidemic diseases.
	(ZY 336) Cell Biology (Paper VI)	CO1. Study of the concepts of cell Biology.
		CO 2. Study of the scope of Cell Biology.
		CO 3. Study of cell structure and cell functions.
		CO 4. Study of broad description of bio-chemistry of cell, structure & functions of cell organelles.
		CO 5. Study of cell biology with its concern aspects scientifically.
		CO 6. Study of the cellular activities.
		CO 7. Study of significance of cell & its molecular activities.
		CO 8. Study of cancer cell & cancer-causing agents.
	(ZY 341) Biological Techniques	CO 1. Study of preparation of different solutions/ strength of chemicals in percentage, normality, ppm, ppb etc.
	(Paper I)	CO2. Study of separation techniques like chromatography, electrophoresis, ultracentrifugation,
		colorimetry and spectroscopy.
		CO3. Study of hematological techniques like Blood cell count, Microscopy, Micrometry and Camera lucida.
		CO 4. Study of micro technique procedure like procurement of tissues, fixatives, method of fixation and dehydration.
		CO 5. Detailed study of microtome: types & knives.
		CO 6. Study of different types of stain and staining procedure.
	(ZY 342) Mammalian Physiology	CO 1. Study of concept of nutrition and study of physiology of digestion related to digestive enzymes.
	and Endocrinology (Paper II)	CO 2. Study of circulation in relation to cardiac cycle, blood pressure and advanced techniques like
		electrocardiogram, angiography and coronary bypass.
		CO 3. Study of types of respiration pulmonary and tissue, transport of oxygen and carbon dioxide, RQ and BMR.
		CO 4. Study of excretion, its physiology, role of ADH and significance of renal failure and dialysis.
		CO 5. Study of striated muscles, theory of muscle contraction and response of muscles to various stimulations.
		CO 6. Study of conduction of nerve impulse, transmission and impulse stimulation, EEG, epilepsy.
		CO 7. Study of reproductive cycles with hormonal control related to pregnancy, parturition and lactation and
		male reproduction.
		CO 8. Study of hormone action and endocrine disorders like- gigantism, dwarfism, goitar, Myxedema etc.
	(ZY 343) Genetics & Molecular	CO 1. Study of Genetics & its study at molecular level.
	Biology (Paper III)	CO 2. Study of the fundamentals of Genetics.
		CO 3. Study the interrelationship between Genetics & Molecular Biology.
		CO 4. Study of awareness about Heredity & Inheritance of traits/ disease.
		CO 5. Study of applications & techniques of the Molecular Biology.
		CO 6. Study of the Molecular processes & activities of Genetic material.
	(ZY 344) Organic Evolution (Paper IV)	CO 1. Study of Origin of Life.
		CO 2. Study of Evidences of Organic evolution.
		CO 3. Study of Theories of Organic evolution.
		CO 4. Study the Isolating Mechanism of species.
		CO 5. Understanding of the mechanism of speciation & their types.
		CO 6. Study the Geological Time Scale.



		CO 7. Study the Animal distribution according to the geographical area.
		CO 8. Study of Evolution of Man.
		CO 9. Study of Zoogeographical realms.
	(ZY 345) General Embryology (Paper V)	CO 1. Study the Scope and Theories of general embryology.
		CO 2. Study the Concepts of Developmental Biology.
		CO 3. Study the Gametogenesis in brief.
		CO 4. Study the Fertilization in brief.
		CO 5. Study the Concepts of Cleavage, Gastrulation, and Blastula in brief.
		CO 6. Study the Chick Embryology in brief.
	(ZY 346) Medical Entomology	CO 1. Study of fundamentals of entomology.
	(Paper (Paper VI)	CO 2. Study of veterinary entomology.
		CO 3. Study of social insects such as wasp and termites and significance of social organization.
		CO 4. Study of household insect related to human such as cockroach, silverfish, ants and bottles.
		CO 5. Study of some insects as agent causing human diseases such as mosquito, housefly, bedbug, flea, tick, mite etc.
	ZY- 347 Practical Paper 1 (Semester III & IV)	CO 1. Description, locomotion and nutrition of different phylum.
		CO 2. Histological studies of the organs like- skin, tooth, tongue, alimentary canal and digestive gland, respiratory
		CO 3. Study of separation techniques like chromatography, electrophoresis, ultracentrifugation,
		CO 4. Study of circulation in relation to cardiac cycle, blood pressure and advanced techniques like
	ZY- 348 Practical Paper 2 (Semester III & IV)	CO 1. Study the practical of biochemistry with classification and Significance.
		CO 2. Study of concept of nutrition and study of physiology of digestion related to digestive enzymes.
	ZY- 349 Practical Paper 3 (Semester III & IV)	CO 1. Study the Scope and Theories of general embryology.
		CO 2. Study of veterinary entomology.
<b>Class</b>	<b>Course</b>	<b>Course Outcome (COs)</b>
M. Sc. I, Zoology		
	(ZOUT 101) Biochemistry I and Biochemical technique	CO 1. Study of chemical process within living organism.
		CO 2. Study the Types of bonds and their functions in biomolecules, study the Structure of Water molecule and their Physical and Chemical Properties.
		CO 3. Study the concept of Acid and Base, pH, Sorensens scale, derivation of Henderson-Hassel Balch equation and its application.
		CO 4. Study the concept of Buffer, Types, Buffering capacity, and buffers in biological system
		CO 5. Much of biochemistry deals with the structures, functions and interactions of biological macromolecules.
		CO 6. Study the Carbohydrates with classification and Significance.
		CO 7. Study the Proteins with Structures and Classifications of Amino acids.
		CO 8. Study the Enzymes their Classification and Regulation.
		CO 9. Study the Lipids and their Classification and Significance.
		CO1. Study of the concepts of cell Biology.
		CO 2. Study of the scope of Cell Biology.
		CO 3. Study of cell structure and cell functions.
		CO 4. Study of overview of chemical nature of cell.
		CO 5. Study of cell biology with its concern aspects scientifically.





Semester-I	(ZOUT 102) Cell Biology and Developmental Biology	CO 6. Study of the cellular activities.
		CO 7. Study of significance of cell & its molecular activities.
		CO 8 Detail study of cell cycle with their regulation.
		CO 9 Study of Cytoskeleton.
	(ZOUT 113) Genetics and English in Scientific Communication	CO1. Study of fundamentals of Genetics, Mendelian ratios & modified Mendelian ratios.
		CO2. Study of classical consent of gene.
		CO3. Study of linkage and crossing over.
		CO4. Study of inheritance of qualitative and quantitative traits.
		CO 5 Detail Study of population genetics.
		CO 6 Study of common error in written and spoken presentation.
		CO 7 Study the hypothesis, theory and concept and genetic code as a simple language.
		CO 8 Study of outline of a science paper and project preparation, funding.
		CO 9 Study the writing of Introduction, Materials and Methods, Observations and Results and Discussion.
	(ZODT 114) Freshwater Zoology	CO 1. Study of types of aquatic environment.
		CO 2. Study of physical and chemical properties of water.
		CO 3. Study of Physiological and protective adaptations of protozoa, rotifer, crustaceans, fishes.
		CO 4. Study of Diagnostic features and life cycle of temporary rainwater pool animals: Fairy shrimps and Tadpole shrimps.
		CO 5. Study of Respiratory and Locomotory adaptations in freshwater insects and their larvae.
		CO 6. Study of Amphibia and water.
		CO 7. Study of Adaptations in Freshwater reptiles.
		CO 8. Study of Economic importance of freshwater mollusks.
		CO 9. Study of Biological changes in freshwater due to sewage pollution and its effect on freshwater animals.
	(ZODP 114) Zoology Practical Paper-I	CO1: Identify commercially important freshwater fish.
		CO2: Identify the aquatic adaptations in common freshwater forms.
		CO3: Prepare the culture of Paramecium and Daphnia.
		CO4: Estimate the hardness and chloride content in water samples.
	(ZOUN 115) Basic Zoology Lab-I	CO1: Identify the developmental stages of chick embryo, cell structures and phases of cell division
		CO2: Identify the grammatical mistakes from the given paragraph and common errors in written and spoken presentations.
		CO3: Write a scientific project and research article along with its proof reading.
		CO4: Demonstrate the working of different microscopes, colorimetric and
Semester II	ZOUT 121	
	Molecular Biology and Bioinformatics	CO1: Explain the DNA structure & types, topology, Physical properties; chromatin structure and organization.
		CO2: Discuss genome organization, DNA and Protein sequencing with their application in evolutionary studies.
		CO3: Explain the mobile DNA elements.
		CO4: Explain mechanism of DNA damage and repair.
	ZOUT 122	
		CO1: Discuss the roles of Pituitary gland and pineal body.
		CO2: Explain hormonal regulation of biomolecules and mineral metabolism.
		CO3: Describe the role of osmoregulatory and gastrointestinal hormones.
		CO4: Explain the role of hormones in moulting, change in body colour of crustaceans; yolk



	Endocrinology and Parasitology	synthesis in amphibians; insect development.
		CO5: Define the terminologies of parasitology.
		CO6: Explain the concepts of animal association with examples.
	ZOUT 123	CO1: Describe the mechanism of thermoregulation in both poikilotherms and homeotherms.
	Comparative Animal Physiology and Environmental Biology.	CO2: Explain the mechanism of chemical communication in vertebrates.
		CO3: Explain the structure and impact of biogeochemical cycles, ecosystems and energy transformation across trophic levels.
		CO4: Describe concepts in population ecology and their significance.
	ZODT 124	CO1: Identify the common fishes in India.
	Ichthyology	CO2: Explain the general characters and evolution of fishes.
		CO3: Explain the fish morphology and anatomical modifications.
		CO4: Illustrate the physiology of reproductive and endocrine organs in fish.
	ZODP 124	
	Zoology Practical Paper-2	CO1: Discuss the signs, symptoms and control measures of common diseases in fish.
		CO2: Justify the role of respiratory and excretory organs in survival of fishes.
		CO3: Classify fishes upto order level.
		CO4: Setup aquarium and manage it.
	ZOUP 125	CO1: Identify the various parasites and parasitic stages of common parasites, nitrogenous waste products of animals, freshwater planktons and slides of endocrine glands.
	Basic Zoology Lab-II	CO2: Explain the principle and significance of gonadectomy, thyroidectomy and pancreatectomy.
		CO3: Demonstrate the role of eye stalk and insulin in sugar level in crab.
		CO4: Demonstrate the retro cerebral complex in cockroach.
		CO5: Demonstrate the RBCs of common vertebrates and effect of various osmolarities.
M.Sc. II		
Semester III	ZOUT 231	CO1: Explain the membrane physiology and its dynamics.
	Special Paper (any one) Animal Physiology-I	CO2: Explain the concept of nutrition and digestion.
		CO3: Explain the structure, contraction and types of contraction of muscle.
	ZOUT 232	CO1: Explain principles, methods of biological classification and diversity in kingdom Animalia.
	Fundamentals of Systematics	CO2: Explain the importance of taxonomic keys and taxonomic characters.
	and	CO3: Explain parasitic roundworms of animal and plants.
	Economic Zoology	CO4: Signify the role of parasitic and soil protozoan in human welfare.
		CO5: Justify the use of animals in pharmaceutical research.
	ZOUT 233	CO1: demonstrate knowledge of research processes (reading, evaluating, and developing)
	Research Methodology and	CO2: perform literature reviews using print and online databases.
	Insect Physiology and	CO3: select and define appropriate research problem and parameters to prepare a project proposal.
	Biochemistry	CO4: identify, explain, compare, and prepare the key elements of a research proposal/report.
		CO5: Demonstrate the process of excretion, detoxification and water balance
		CO6: Justify the role of insect hormones in physiological processes.
	ZODT 234	CO1: Define genotoxicity test systems.
	Genetic Toxicology	CO2: Describe basic toxicological principles and describe how different chemicals are taken up



		by, processed in and eliminated from the body
		CO3: Inspect physical and chemical genotoxic agents being exposed in his/her environment
		CO4: Illustrate physical and chemical genotoxic agents.
		CO5: Explain efficiency mechanisms of physical chemical genotoxic agents
		CO6: Relate genotoxicity and DNA repair mechanisms and relate types of mutation and DNA repair
		CO7: Judge about proper genotoxicity test for mutation types
	ZODP 234 Zoology Practical Paper- 3	CO 1. to study Dominant lethal test in Drosophila (Compulsory)
		CO 2. to study Sex linked recessive lethal test in Drosophila
	ZOUP 235	CO1: Demonstrate the effect of body size and salinity on oxygen consumption in given
	Special Lab I	animal.
		CO2: Demonstrate the effect of starvation on liver and muscle glycogen in given animal
		CO3: Collect and preserve animal samples using common methods.
		CO4: Write scientific report of field/ institutional visit.
		CO5: Conduct a scientific survey.
	ZOUT 241	CO1: Explain the composition of blood, types of blood cells, vascular dynamics and clotting.
	Special Paper-Any One- Animal Physiology-II/	CO2: Illustrate the anatomy and physiology of heart and cardiac cycle
		CO3: Describe the excretory system, nitrogenous wastes and renal regulation
		CO4: Illustrate the osmoregulatory mechanism in Invertebrates and Vertebrates
		CO5: Discuss the neuronal physiology and various potentials.
	ZOUT 242	CO1: Explain the male and female reproductive systems and sexual dimorphic
	Aquaculture	CO2: Explain the sexual cycles with examples
		CO3: Describe the methods of freshwater prawn culture and its management.
		CO4: Explain the methods of pearl culture and pearl harvesting.
		CO5: Illustrate the preparation and management of fish culture ponds.
		CO6: Demonstrate the methods of packaging and transport of fish and brood fish.
Semester IV	ZODT 243 Pest Control	CO1: Explain the Pest, nature of damage caused by pests and pest control.
		CO2: Explain medical, veterinary, Household and stored grain pests.
		CO3: Explain the Principles and methods of pest control including biological control measures.
		CO4: Explain the Integrated pest management (IPM)
		CO5: Explain the Non- insect pest and their control: Rat, Bandicoots, Crabs, Snails, Slugs, Birds and Squirrels.
		CO5: Explain the principle and working of pesticide appliances.
	ZODP 243 Zoology Practical Paper-4 (Practicals corresponding to ZOUT 241 and ZODT 243)	CO1: Determine the bleeding and clotting time of human blood.
		CO2: Demonstrate the invertebrate heart.
		CO3: Calculate the heartbeats of Daphnia/Drosophila larva.
		CO4 : Determine the LD50



		CO5 : Behavior of insects to repellants and attractants.
		CO6 : Know the principle and working of pesticide appliances.
ZODT 244 Apiculture		CO1: Explain the basic concepts of apiculture like systematics, colony organization, polymorphism, morphology and foraging.
		CO2: Explain the tools and management of apiary.
		CO3: Explain the importance of institutions pertinent to apiculture.
ZODP 244 Zoology Practical Paper-5 (Practical corresponding to ZOUT 242 and		CO1: Identify the histological slides of reproductive organ/tissues.
		CO2: Explain the various types of placentas in mammals.
		CO3: Comment on merits and demerits of contraceptive devices/methods.
		CO4: Test the freshness of fish/prawn by histological methods.
		CO5: Test the freshness of fish/prawn by biochemical methods.
		CO6: Identify the honey bees
		CO7: explain the bee morphology and behaviour
ZOUP 245		CO1. learn the project on different topic
(Project)		CO2. Learn the methodology in research

**Programme Outcomes (PO), Programme Specific Outcomes (PSO) & Course Outcomes (COs) for COMMERCE FACULTY**

**Programme Outcomes (POs) Of B. Com.**

PO1		A career options after BCom includes Accountant, Account Executive.
PO2		A few government jobs roles suitable for B.com graduates. (Income Tax officers, Railway Accounts Officers)
PO3		Top companies that hire commerce graduates
PO4		Best career option After B. Com Sales Manager.
PO5		MBA is the most popular course available for after B. Com
PO6		If you are wondering what to do after B. Com, Company Secretary (CS) IS one of the pivotal job roles from the B. com.
PO7		CMA (certified management account) is about a career after B. Com in aboard.
PO8		A career options after B.com Telecommunications services.
PO9		A Completion of B. Com and acquiring in direct and in direct taxes jobs for B. Com graduates.
PO10		After B.com The jobs in Banking industries are very much in demand. like (HDFC, SBI, ICICI etc.)

**Programme Specific Outcomes (PSOs) Of B.Com**

PSO1		That hire B.Com graduates in positions like Insurance Agents.
PSO2		The jobs for B.Com graduates found to be great in Business management.
3		B.Com Aspirants eligible for both programmes separately can pursue a CA with B.Com.
4		While pursuing B. Com degree, we can do digital marketing course so that we can get opportunities for suitable jobs.
5		You can do ADCA (Advance diploma in computer application) is best course with B. COM

**Programme Outcomes (POs) Of M. Com**

		Able to acquire basic and fundamental knowledge and skills for doing business and commercial activities of their choice.
		Acquire the accounting knowledge, management principles, retail trading, banking and insurance transactions, business economics and financial management



PO3		Appear Government jobs for M. Com graduates like IBPS, SBI PO, SSC CHL etc..)
PO4		after completing M. Com degree course, some candidates opt for PhD or M. Phil course.
PO5		Demonstrate knowledge of the theories, concepts and findings of the various specializations.
PO6		The best opportunities after M. Com. on Economic Consulting Firms.
PO7		Develop and capable of doing a business of their choice or choosing a profession or can become employees having basic knowledge and skill required for such activities.
PO8		Demonstrate knowledge of accounting theory as it relates to markets, firms, government policy, and resource allocation.
PO9		After M. Com degree candidates need to qualify B. ED to teach commerce subjects to class 11 and class 12.
PO10		Apply basic accounting and statistical skills necessary for analysis of a range of problems in economics, actuarial studies, accounting, marketing, management and finance.
<b>Programme Specific Outcomes (PSOs) Of M. Com</b>		
PSO1		Empowers the students to choose a profession of their choice such as CA, CS, ICWA, MBA, M. Com etc
PSO2		Acquire knowledge in the field of management accounting, corporate accounting, statistical and mathematical techniques and knowledge relating to corporate law and business laws
PSO3		Generate realistic solutions based on current academic research in organizational behavior.
PSO4		Digital Marketing is also a good course while doing M.Com.
PSO5		While pursuing M. Com degree, we can do PGDCA Diploma course so that we can get opportunity for suitable jobs.
<b>Class</b>	<b>Course</b>	<b>Course outcomes (COs)</b>
F.Y.B com	Financial Accounting- I	CO.1 To impart knowledge of basic accounting concepts
Semester		CO.2 To create awareness about application of these concepts in business world
		CO.3 To impart skills regarding Computerized Accounting
		CO.4 To impart knowledge regarding finalization of accounts of various establishments.
	Marketing and Salesmanship- I	CO.1 To introduce the basic concepts in Marketing.
		CO.2 To give the insight of the basic knowledge of Market Segmentation and Marketing Mix
		CO.3 To impart knowledge on Product and Price Mix.
		CO.4 To establish link between commerce, business and marketing
		CO.5 To understand the segmentation of markets and Marketing Mix.
		CO.6 To enable students to apply this knowledge in practicality by enhancing their skills in the field of Marketing.
	Business Mathematics & Statistics- I	CO.1 To introduce the basic concepts in Finance and Business Mathematics and Statistics
		CO.2 To familiar the students with applications of Statistics and Mathematics in Business
		CO.3 To acquaint students with some basic concepts in Statistics.
		CO.4 To learn some elementary statistical methods for analysis of data.
		CO.5 The main outcome of this course is that the students are able to analyze the data by using some elementary statistical methods
	Organizational Skills Development- I	CO.1 To introduce the students to the emerging changes in the modern office environment
		CO.2 To develop the conceptual, analytical, technical and managerial skills of student's efficient office organization and records management
		CO.3 To develop the organizational skills of students
		CO.4 To develop employability skills among the students
	Financial Accounting- II	CO.1 To impart knowledge of various software used in accounting
		CO.2. To impart knowledge about final accounts of charitable trusts
		CO.3 To impart knowledge about valuation of intangible assets
		CO.4 To impart knowledge about accounting for leases



	Business Mathematics and Statistics - II	CO.1 introduce the basic concepts in Finance and Business Mathematics and Statistics
		CO.2To familiar the students with applications of Statistics and Mathematics in Business
		CO.3To acquaint students with some basic concepts in Statistics.
		CO.4To learn some elementary statistical methods for analysis of data
	Organizational Skill Development- II	CO.1To imbibe among the students the qualities of a good manager and develop the necessary skill set
		CO.2 To develop the technical skills of the students to keep up with the technological advancements and digitalization
		CO.3To develop the communication skills of students and introducing them to the latest tools in communication
	Marketing and Salesmanship- Fundamental of Marketing- I	CO.1To introduce the concept of Salesmanship
		CO.2To give insight about various techniques required for the salesman
		CO.3To inculcate the importance of Rural Marketing.
		CO.4To acquaint the students with recent trends in marketing and social media marketing.
SYB Com	Business Communication- I	CO.1To understand the concept, process and importance of communication
Semester		CO.2To acquire and develop good communication skills requisite for business correspondence.
		CO.3To develop awareness regarding new trends in business communication
		CO.4To provide knowledge of various media of communication
	Business Communication- II	CO.1 To understand the concept, process and importance of communication.
		CO.2 To acquire and develop good communication skills requisite for business correspondence.
		CO.3 To develop awareness regarding new trends in business communication.
		CO.4 To provide knowledge of various media of communication.
	CORPORATE ACCOUNTING –I	CO.1To acquaint the student with knowledge about various Concepts, Objectives and applicability of some important accounting standards associated with to corporate accounting.
		CO.2To develop understanding among the students on the difference between commencement and incorporation of a company and the accounting treatment for transactions during the two phases.
		CO.3To update the students with knowledge for preparation of final accounts of a company as per Schedule III of the Companies Act 2013
		CO.4 To empower to students with skills to interpret the financial statements in simple and summarized manner for effective decision-making process.
	CORPORATE ACCOUNTING –II	CO.1 To acquaint the student with knowledge of corporate policies of investment for expansion and growth through purchase of stake in or absorption of smaller units.
		CO.2 To develop the knowledge among the student about consolidation of financial statement with the process of holding
		CO.3 To update the students with knowledge of the process of liquidation of a company
		CO.4 To introduce the students with the recent trends in the field of accountancy
	Business Management-I	CO.1 To provide basic knowledge and understanding about various concepts of Business Management.
		CO.2 To help the students to develop cognizance of the importance of management principles.
		CO.3 To provide an understanding about various functions of management.
		CO.1To provide basic knowledge and understanding about various concepts of Business
		CO.2To help the students to develop cognizance of the importance of management principle
		CO.3To provide an understanding about various functions of management
		CO.4To provide them tools and techniques to be used in the performance of the managerial
	Cost and Works Accounting: –I	CO.1. To understand and explain the conceptual framework of CW
		CO.2To equip the students to seek suitable career in CWA and Entrepreneurship





		CO.3To develop communication and analytical skill among students through self-learning
		CO.1To inculcate Theory and expose to practical world
		CO.2To develop skills to find out customize and creative solutions to ever increasing business
		CO.3To motivate students to apply costing knowledge in dealing current problem
	BUSINESS LAWS AND PRACTICE – I	co.1To develop an understanding of the significant provision of selective Business
		CO.2To gain the ability of students to address a basic business legal application
		CO.1To develop general awareness among the students about management of
		CO.2To have a comprehensive understanding about Key managerial Personnel of company and their role in Company administration
		CO.3. To acquaint the students about E Governance and E Filling under the Companies Act, 2013
		CO.4. To make students capable of becoming good human resource of the corporate sector.
	Marketing Management	To introduce the concept of Marketing Management
		CO.2To give the students the basic knowledge of Marketing Management to be a successful
		CO.3To give the students the basic knowledge of Marketing Management to be a successful
		CO.4To interpret the issues in marketing and their solutions by using relevant theories of marketing
		CO.1To orient the students in recent trends in marketing management.
		CO.2To understand the concept of Green Marketing
		CO.3To enable students to apply this knowledge in practical by enhancing their skills in the field of Marketing.
T.Y.B.com	Auditing (Sem-1)	CO1 Understand the concept of auditing
Annual		CO2 Learnt the process of auditing.
		CO3 To know the concept of tax audit.
	Advance Accounting	CO1 To know the basic of accounting standards.
		CO2 To know the band final account and its uses in banking co.
		CO3 To know the insurance claim accounting & its types.
	Cost and works accounting	CO1 To know the basic of marginal costing.
		CO2 To know the cash budget and flexible budget.
		CO3 To know the standard costing and variances.
	Marketing management (Spl-3)	CO1 To know the detailing of marketing research.
		CO2To understand the role brand and distribution.
		CO3To inform about Marketing and economic development.
M.Com-I(Sem-I)	Advanced accounting and taxation	CO1 To lay a theoretical foundation of account
		CO2 To study a theoretical foundation of accounting and accounting standards.
		CO3 To gain ability to solve problems relating to company accounts.
	Advanced accounting and taxation	CO1 To develop competency of student to solve problems relating special areas in account.
		CO2 To understanding of financial reporting practices.
		CO3 To familiarize the student with procedure of accounting for taxation.
	Income tax	CO1 To know the computation of income under salaries.
		CO2 To know the computation of business and profession.
		CO3To study and understand computation of taxable income.
	Business tax assessment and planning	CO1 To know the assessment of companies & co-operative society.
		CO2 To know the tax planning.



		CO3 To know the GST and its applications.
M.Com -II	Capital market and financial services	CO-1 Understand the concept of Capital market.
		CO2 To learn the process of stock market.
		CO3 To learn the financial services of co-operative sector.
M.C.om- II	Specialized areas in auditing	CO1 To know the audit under tax laws is going on.
		CO2 To know and understand internal audit.
		CO3 To know audit of co-curative societies.
M.Com-II	Advanced auditing	CO1 To know the basic concepts of auditing.
		CO2To know the IFRS & standards.
		CO3 To know the audit under CIS Environment.
M.Com-II	Recent advances in accounting, taxation and auditing	CO1 To know about IFRS and listing agreement clause-49
		CO2 To know environmental accounting and forensic accounting.
		CO3 To know lean and responsibility accounting.
Department of BBA (Computer Application)		
Programme Outcomes (PO) Of B.BA. CA.		
PO1		To produce skill oriented human resource.
PO2		To import practical skills among students.
PO3		To make industry ready resource.
PO4		To bring the spirit of entrepreneurship
PO5		Students will be able to give Design Specifications for Project.
PO6		Students will acquire Knowledge in Basic Modeling.
PO7		Students will acquire Project Management Skills.
PO8		Able to develop applets for web applications.
PO9		Able to design GUI based applications
PO10		To discuss the basic concepts AI.
Programme Outcomes (PSO) of B.BA .CA		
PSO1		Effectively communicating computing concepts and solutions to bridge gap between computing industry experts.
PSO2		Effectively utilizing their knowledge of computing principles to develop sustainable solutions to current and future computing problem.
PSO3		Developing and implementing solution-based system.
PSO4		Give information about software design and development practices to develop software in emerging areas.
PSO5		Successful career and Entrepreneurship.
	CA-101: Business Communication	CO1: Student understand importance of communication in business.
	Paper I	Course Outcome
	CA-102: Principle of Management	CO1: Students are understood different business organization.CO2: Students are familiar about recent trends of management
	Paper II	
	CA-103: C Language Paper III	CO1: Students can solve problem by analyzing and converting logical thinking to computer understandable format using C Programming.
		CO2: Student learns the basic terminologies of C language.



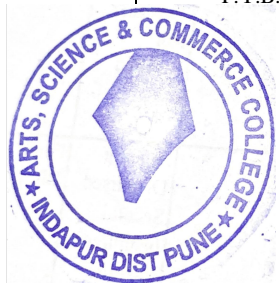
		CO3: Students will be able to design their own programme to solve mathematical problems using C Programming.
	CA-104: Database Management System Paper IV	CO1: Students understand basic database concepts in database system.
		CO2: Students can write SQL queries and do database connectivity with any front-end platform.
	CA-105: Statistics Paper V	CO1: Students will be able to understand the concept of measures of central tendency and variation, probability and probability distributions and their importance in business
	CA-106: Computer Laboratory Based on 103 & 104	CO1: Students can write programmes in C Programming and make their own databases using Oracle.
	CA-107: Add-On (PPA)	CO1: Analytical and Logical Thinking is developed amongst students.
		CO2: Students can find solution of problems using Problem Solving Techniques.CO3: Students learn Basic idea of programming.
Semester II		CO4: Students will be able to write their own algorithms.
	CA-201: Organization Behavior & Human Resource Management Paper I	CO1: Students enhance and apply the knowledge they have received for the betterment of the organization.
		CO2: Students are understood the importance of Human resource management.
		CO3: Students are aware about different functions of HRM.
	CA-202: Financial Accounting	CO1. Maintenance, proper handling, creation, firing queries to the database with mapping cardinalities, Cartesian product.
	Paper II (202)	CO1: Student acquired sound knowledge of basic concepts of accounting.
		CO2: Students are practicing tally software package in their day today life.
	CA-203: Business Mathematics Paper III	CO1: Students understand the nature of mathematics and be able to use mathematical concepts in business and their day-to-day life
	CA-204: Relational database (Paper IV 204)	CO1: Students understand relational database concepts and transaction management concepts in database system.
		CO2: Students can write PL/SQL programmes that use procedure, function, package, cursor and trigger.
		CO1: Students will be aware of world's best open-source web technology.
	CA-205: Web Technology HTML-JS-CSS (205) Paper V	CO2: Student will be able to design website user interface. client communicative web site.
	Lab course – II Practical Paper VI (206)	CO1: Students understand how data of different types can be handled / accessed using different structures using C Programming.
	CA-207: Add-On (Advance C)	CO1: Students can solve problem by analyzing and converting logical thinking to computer understandable format using C Programming.
	CA-301: Digital Marketing Paper I	CO1: Students will be able to understand the new digital market and its terminology.
		CO2: Students will get greatest benefit of digital marketing which will allow to target the ideal buyer, through social media or with any digital platform.
	Data Structure using 'C' (302) Paper II	CO1: Students will be able to understand the concepts of ADTs and learn linear data structures – lists, stacks, and queues.
		CO2: Students will be able to understand the sorting, searching and hashing algorithms and apply Tree and Graph structures
	CA-303: Software Engineering Paper III	CO1: Students will be able to understand the System concepts and learn Software Engineering concepts.
		CO2: Students will be able to understand the applications of Software Engineering concepts and Design in Software development
		CO3. Study of management of all resources in the O.S.
	CA-304: Angular JS Paper IV	CO1: Student will be able to create single page applications with AngularJS.
		CO2: student will be able to understand how to create website Angular JS
	CA-305: Big data Paper V	CO1: Student understand and able to develop analytical skills in current a developing areas of analysis statistics, and machine learning.
		CO2: Student can be able to identify, develop and apply detailed analytical, creative, problem-solving skills
		CO3: Course provides a comprehensive platform for career development and



	Lab Course-Practical (306) Paper VI	CO1: Students will learn practical application of how to implement different data structures to solve the problems. They will be able to apply different sorting techniques on different types of data.
		CO2: Students will understand how to design AngularJS Single Page Application, create and bind controllers with JavaScript and apply filter in AngularJS application.
		CO3: Students will be able to identify, develop and apply detailed analytical, creative, problem-solving skills.
	CA-307: Environment Awareness	CO1: This course helps students know about environmental pollution, its effect on human being.
		CO2: Students get information about the government initiatives for conservation of Environment and what are the controlling measures.
	CA-401: Networking	CO1: Students will be able to understand the basic concepts of Operating System.
		CO2: Students will be able to understand the concept process scheduling within the Operating system, also get knowledge about Deadlock and if deadlock arises then how to avoid deadlock.
	CA-402: Object Oriented Concepts Through CPP Paper II	CO1: Students will be able to understand the basic object-oriented concepts.
		CO2: Students will be able to apply C++ features like operator overloading, constructor and destructor, inheritance, polymorphism, and exception handling
	CA-403: Operating System Paper III	CO1: Students will be able to understand the basic concepts of Operating System.
		CO2: Students will be able to understand the concept process scheduling within the Operating system, also get knowledge about Deadlock and if deadlock arises then how to avoid deadlock
	CA-404: NODE JS Paper IV	CO1: Student able to understand one of the most popular runtime Environment to create server-side application with JavaScript.
		CO2: Student understand how to create server application with node is, also get information about to connect with database and how to use third party module in current application.
	CA-405: Project Paper V	CO1: Students get ideas about how to create Software projects. How to write the project abstract, how to write the project documentation.
		CO2: How to create a database along with code logic to create the input screen and generate the output screen.
	Lab Course-Practical (406) Paper VI	CO1: Students will learn practical application of object-oriented concepts in programming using C++.
		CO2: Students will understand how to apply the use of operator overloading, constructor and destructor, inheritance, polymorphism, and exception handling with examples.
		CO3: Students will be able to understand how to apply Structure a Node application in modules and how to Build a Web Server in Node.
	CA-407: Add-On (JQUERY)	CO1: Students will be able to understand the JavaScript language and the document object Model. jQuery is JavaScript library.
	Java Programmemeing (501) Paper I	CO1. Development System Software's
	Web Technology (502) Paper II	CO1. Knowledge of the Programming in JavaScript, VBScript and html syntaxes, methods for web application development
	Dot NET Programmemeing (503) Paper III	CO1. It is helpful to students that how to develop Desktop Application.
	Object Oriented Software	CO1. Designing, Maintaining, Implementing, Testing Software Products
	Engineering (504) Paper IV	
	Lab Course-Project Practical (505) Paper V	CO1. Project learning, also known as project-based learning, is a dynamic approach teaching in which students explore real-world problems and challenges, simultaneously developing cross-curriculum skills while working in small collaborative groups
	Lab Course-Project Practical (506) Paper VI	CO1. Developing Desktop Application software's, Logical and Analytical Skills, Problem Solving Skills
		CO1: This is helping students to learn Java/Dot net/Web Technology Programme in a simple and effective manner so that students are able to work in company as developer
	Advanced Web Technology (601) Paper I	CO1. Developing Web Applications
	Advanced Java (602) Paper II	CO1. Design & Developing Web Application software.



Semester VI	Recent Trends in IT (603) Paper III	CO1.Understanding of current trends in Software industries and corporate sectors.
	Software Testing (604) Paper IV	CO1.Testing of a developed Software.
	Lab Course-Project Practical (605) Paper V	CO1. Project learning, also known as project-based learning, is a dynamic approach to teaching in which students explore real-world problems and challenges, simultaneously developing cross-curriculum skills
	Lab Course-Project Practical (606) Paper VI	CO1. Developing the Desktop Application software's, Logical and Analytical Skills, Problem Solving Skills.
		CO1. Able to develop applets for web applications and design GUI based applications.
Department of Economics		
Programme Outcomes (POs) for B. Com Economics		
PO 1		To relate and recognize the concept and indicators of Economic Development.
PO 2		To describe and analyze the concept and indicators of Human Development.
PO 3		To explain the characteristics of Developing and Developed Countries.
PO 4		To describe the constraints to the process of Economic Development.
PO 5		To describe and explain the process of Economic Planning.
PO 6		To describe and examine the changing structure of planning process in India.
PO 7		To describe and explain the relation between Economic Development and Environment.
PO 8		To provide the students with the background of the Indian Economy with focus on contemporary issues like economic environment.
PO 9		At the end of the course, the student should be able discuss and debate on the various issues and challenges facing the Indian Economic Environment.
PO 10		Ability to develop awareness on the various new developments in the different sectors of an economy – agriculture, industry, services, banking, etc.
Programme Specific Outcomes (PSOs) for B. Com Economics		
PSO 1		Ability to develop an understanding of the economic environment and the factors affecting economic environment.
PSO 2		At the end of the course, the student should be able discuss and debate on the various issues and challenges facing the Indian Economic Environment.
PSO 3		To help the students to prepare for varied competitive examinations
PSO 4		Making students financially literate.
PSO 5		Students understand the financial environment of the family
F.Y.B.Com	Subject: -Business Economics (Micro)– SEM- I&II	CO 1. To impart knowledge of business economics
		CO 2. To clarify micro economic concepts
		CO 3. To analyze and interpret charts and graphs
		CO 4. To understand basic theories, concepts of micro economics and their application
F.Y.B.Com	Subject: - BANKING & FINANCE SEM- I&II	CO 1. To provide knowledge of fundamentals of Banking
		CO 2. To create awareness about various banking concepts
		CO 3. To conceptualize banking operations.
		CO 1. To familiarize the students to the basic theories and concepts of Macro Economics and their application.
	Subject: Banking and Finance-I (Indian Banking System - I) SEM-III&IV Course Code: 236(B)	CO 2. To study the relationship amongst broad aggregates.
		CO 3. To impart knowledge of business economics.
		CO 4. To understand macroeconomic concepts.
		CO 5. To introduce the various concepts of National Income.
S.Y.B. Com		CO 1. To provide the knowledge about Indian Banking System.
		CO 2. To create the awareness about the role of banking in economic development.



	Subject: Banking and Finance-I (Indian Banking System - I) SEM-III&IV Course Code: 236(B)	CO 3. To provide the knowledge about working of Central Banking in India. CO 4. To know the functioning of private and public sector banking in India.
T.Y.B. Com	Subject Name -: Indian & Global Economic Development SEM-V&VI Course Code -: 352 (A)	CO 1. Students will be able to understand present Economic Scenario of Indian Economy as well as World Economy.
		CO 2. Students will be able to understand the various aspects of development in Agricultural, Industrial and service sector in India.
		CO 3. Student will be able to critically evaluate the role of India in international economy.
		CO 4. Students will be able to evaluate the working of international financial organization and institutions
	Subject Name -: Banking & Finance Special Paper II SEM-V&VI Course Code -: 364(B)	CO 1. To acquaint the students with Financial Markets and its various segments.
		CO 2. To give the students and understanding of the operations and developments in financial markets in India.
		CO 3. To enable them to gain an insight into the functioning and role of financial institutions in the Indian Economy
	Subject Name -: Banking Law and Practices in India. SEM-V&VI	CO 1. To familiarize the Banking Laws and Practice in correlation to the Banking System in India.
		CO 2. To understand the legal aspects of Banking transactions and its implication as a Banker and as a customer.
		CO 3. To familiarize the students with the Banking Laws and Practices in India.

  
**PRINCIPAL**  
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**COMMERCE COLLEGE**  
**INDAPUR 413106 DIST- PUNE**

