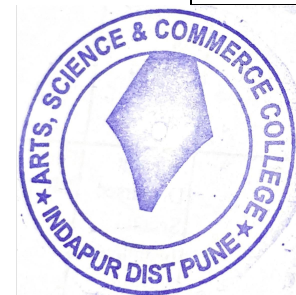


ARTS SCIENCE AND COMMERCE COLLEGE INDAPUR		
A.Y. 2018-19		
Programme Outcomes (POs), Programme Specific Outcomes (PSOs) & Course Outcomes (COs) for Arts Faculty		
Department of English		
		Programme Outcomes (POs) Of English Department B.A.
PO1	Understanding and Knowledge:	A graduate student is expected 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 got 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 Specific 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



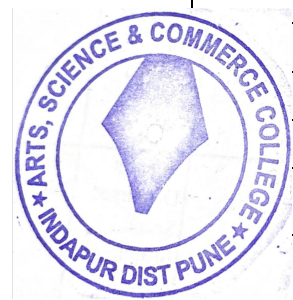
Class	Course	Course outcomes (COs)
(Annual)	Compulsory English	CO1. Development of literary and linguistic test of the newly admitted students.
		CO2. Improvement of communication skills in English
		CO3. Enrichment of Grammatical sense and writing skills.
		CO4. Developing an ability for dialogue and group discussion.
	Optional English	CO1.Development of liking for English literature
		CO2.Clear understanding of the aims and objectives of course
		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
	Compulsory English Literary Landscape	CO1.Strengthening the literary and linguistic test of the students.
		CO2.Improvement of communication skills in English
		CO3. Enrichment of Grammatical sense and reading skills.
		CO4. Ability of group discussion and oral presentation
	Special English Paper I	CO1. Introduction of elements of drama.
(Annual)	Special English Paper I	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.
	General English Paper II	CO 1. Familiarizing the students with the minor form of literature.
		CO 2. Introduction of short story as Genre of Literature.
		CO 3. Familiarizing with the basics of English Language.
		CO 4. Awareness of phenomena of world English.
		CO1. Vocabulary, prefix and suffix



	Functional English Paper III	CO2. Elaboration of concepts
		CO3. Different types of Report
		CO4. Language used for Radio and TV programs
	Functional English Paper IV	CO1. Verbal and Non-verbal Communication
		CO 2. Reading Newspaper, situational conversations
		CO3. Group Discussion and group activities
		CO4. Interview skills
	Compulsory English	CO 1. Improvement of speaking skills in English.
		CO 2. Enrichment of the Grammatical sense and news reporting.
		CO 3. Skills for comparing 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
		CO3. Knowledge of the novels
		CO4. Introduction to the critical analysis of prose passages
(Annual)	Special English Paper IV	CO1. Enrichment of critical views of the students
		CO2. Development of broad views in students about various approaches
	General English Paper III	CO3. Study of the interpretation of various critics
		CO4. Knowledge of different critical terms
		CO1. Enrichment of competence in English
		CO2. Introduction of clauses and phrases
	Functional English Paper V	CO3. Illustration of pragmatics
		CO4. Development of the poetry writing skill
		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
		CO1. Possibilities of self-employment



	Functional English Paper VI	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		
Program: B.A. (Marathi)		
PSOs		Program 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, including.
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.
		Program Specific Outcomes (PSOs) B.A.
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, including.
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.
		Program: M.A. (MARATHI)
		Program Specific Outcomes (PSOs)
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, including.
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.
		Program Outcomes M.A. (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, including.
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.
Class	Course	Course outcomes (COs)
F.Y.B.A	Vyavhari ko upyogita Marathi bhag 1	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
	Vyavhari ko upyogita Marathi bhag -2	CO1. Assess the interactional processes, love and aggression in our day today life.
		CO2.Understand group dynamics and individual in the social world.
		CO3.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.
Y.B. A	G2	
		CO1.Conducting live interviews for various media.
	S1	CO2 To understand the nature, motivation, purpose, characteristics and movement of the literary genre of travelogue.
		CO1 To appreciate and analyze the assigned travelogue.
		CO2. Philosophical analysis of essay and descriptive literature



		CO3. To increase the introduction of various types of literature in modern Marathi literature
	S2	CO1. understand them, to develop the taste for literature and to increase the ability to appreciate the work of art
	S2	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	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	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	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.
	Dalit sahitya	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.
	Loksahityachi muretatv-1	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



M.A.-I		CO5. To understand the language and style of literature.
	Nameleliya Arwachin Sahitya Kritimta 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
	Dalit sahitya	CO1. To understand language form, features and functions.
		CO2. 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
M.A.- II	5	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.
		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
	6	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.
	7	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.



M.A.- II	7	CO4. To develop appreciation and appreciation of historical literature.
		CO5. Conducting live interviews for various media.
	8	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.		
Department of Political Science		
Programme Outcomes (POs) -B.A.		
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.
Programme Specific Outcomes (PSOs) -B.A.		
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.



Programme Outcomes (POs) -M.A.		
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.
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Programme Specific Outcomes (PSOs) -M.A.		
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.
Course Outcomes (COs)		
F.Y.B.A.	Indian government and politics	CO1.To acquaint students with the important features of the Constitution of India and with the basic framework of Indian government.
		CO 2. To familiarize students with the working of the Constitution of India.
		CO3. Emphasis on local influences of castes and jatis from language, religion ethic.
		CO4. Learning of background of our constitution federal system structure of our state and central govt. party system election process.
S.Y.B.A.		
Annual)	Political Theory and concepts Paper-G-2	CO1.This is an introductory paper to the concepts, ideas and theories with reference to individual thinkers



		CO2. Students can learn in detail the concept of state, liberty, justice, power and Authority
		CO3. It is need of students to emphasize the containing this relevance of concepts.
	S1 Western Political Thoughts	CO1. From this paper students can studies the various thinkers and their thought.
		CO2. Students can study the classical tradition in politics theory from Plato to Marx.
	S2 Political Sociology	CO1. Students will learn basic principles of political theory.
		CO2. They can study various types of Political culture of different country.
		CO3. Knowledge of nature and types of Political participation.
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	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 : Political Theory	CO1.This 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 : Public Administration	CO1. Public 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.



M.A. Political Science	PO-C4 : Public policy	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-C5 : Issues in World Politics	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-C6 : Comparative 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-O1 : Modern Political Ideologies	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.
		CO3. 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.
		CO4. 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	CO1.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.
		CO2. It also seeks to acquaint the student with the practice of studying elections in India and issues involved in it.

Department of History

Program: B.A. (History)

Program 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.
PO 4		To option of public service is always open.
PO 5		History of The World In 20TH Century.
PO 6		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.
PO 7		Introduction To History, History of Asia In 20TH Century.
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.
PO 10		To understands to Evaluate and recognize different Empire in Indian history.
PO 11		Understand the nature and basic concepts of History of Early India, Medieval India, Chh. Shivaji & His Times, Modern India
PO 12		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.
PO 13		To analyze relationship between the past and the present is lively presented in the history.



Program 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.
Program Specific Outcomes (PSOs): M.A. (History)		
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.
Program Outcomes (POs): M.A. (History)		
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)
A. Sem I	Early India: From Prehistory to the Age of the Mauryas	CO1. It is a base for understanding the entire Indian history.
	Course Code : 11171	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.
	Early India: Post Mauryan Age to the Rashtrakutas	CO1. It is a base for understanding the entire Indian history.



F.Y.B.A. Sem II	Course Code : 12171	Provocative.
		CO2. 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.
S.Y.B.A. Sem III	CC - History of the Marathas: (1630-1707)	CO1. Student will develop the ability to analyse sources for Maratha History.
	Course Code : 23174	CO2. Student will learn significance of regional history and political foundation of the region.
		CO3. It will enhance their perception of 17th century Maharashtra and India in context of Maratha history.
		CO4. Appreciate the skills of leadership and the administrative system of the Marathas.
	DSE 1 - Medieval India - Sultanate Period	CO1. Provides examples of sources used to study various periods in history.
	Course Code : 23171	CO2. Relates key historical developments during medieval period occurring in one place with another.
		CO3. Analyses socio - political and economic changes during medieval period
	DSE 2 - Glimpses of the Modern World - Part I	CO1. It will enable students to develop the overall understanding of the Modern World.
S.Y.B.A. Sem III	Course Code : 23172	CO2. The students will get acquainted with the Renaissance, major political, socio-religious and economic developments during the Modern World.
		CO3. It will enhance their perception of the history of the Modern World.
		CO4. It will enable students to understand the significance of the intellectual, economic, political developments in the Modern World.
	DSE 2 - History of East Asia	CO1. It will enable students to develop the overall understanding of the Asian countries.
	Course Code : 23173	CO2. The students will get acquainted with the Communism in China & Imperialism of Japan.
		CO3. It will enhance their perception of the developmental Policies of the Asian Countries
		CO4. It will enable students to understand the significance of the intellectual, economic, political developments in the Modern World.
	SEC - Tourism Management	CO1. Students will get an overall understanding of the process of Tourism Management.
	Course Code : 23178	CO2. They will learn to work in the Tourism Management with great potential.
		CO3. They will be able to seek self-employment by starting their own tourism related business.
S.Y.B.A. Sem IV	CC - History of the Marathas: (1707-1818)	CO1. Students will be able to analyze the Marathas policy of expansionism and its consequences.
	Course Code : 24174	CO2. They will understand the role played by the Marathas in the 18th century India
		CO3. They will be acquainted with the art of diplomacy in the Deccan region.
		CO4. It will help to enrich the knowledge of the administrative skills and profundity of diplomacy.
	DSE 1 - Medieval India - Mughal Period	CO1. Provides examples of sources used to study various periods in history.
	Course Code : 24171	CO2. Relates key historical developments during medieval period occurring in one place with another.
		CO3. Analyses socio - political and economic changes during medieval period
	DSE 2 - Glimpses of the Modern World - Part II	CO1. It will enable students to develop the overall understanding of the Modern World.
	Course Code : 24172	CO2. The students will get acquainted with the Renaissance, major political, socio-religious and economic developments during the Modern World.



		CO3. It will enhance their perception of the history of the Modern World.
		CO4. It will enable students to understand the significance of the intellectual, economic, political developments in the Modern World.
	DSE 2 - History of West Asia	CO1. It will enable students to develop the overall understanding of the Asian countries.
	Course Code : 24173	CO2. The students will get acquainted with the Communism in China & Imperialism of Japan.
		CO3. It will enhance their perception of the developmental Policies of the Asian Countries
		CO4. It will enable students to understand the significance of the intellectual, economic, political developments in the Modern World.
	SEC - Travel Agency and Tour Business	CO1. The students will understand the details of the business of Travel Agency.
	Course Code : 24178	CO2. They will be trained on both Theory and Practical aspect and Travel Agency and creating professionals for Tourism Industry.
		CO3. It will enable student to seek self-employment by starting their own Travel Agency related to business.
T.Y.B.A.	HISTORY OF THE WORLD	CO1. Enable students to understand Modern World, acquaint the student with the Socio-economic & Political
		CO2. Developments in other countries. And understand the contemporary world in the light of its background history.
		CO2. Orientation of the students with political history of Modern World.
		CO3. Knowledge about the main developments in the Contemporary World
		CO4. Impart knowledge about world concepts.
		CO5. Understanding of the economic transition in World during the 20th Century.
		CO6. Become aware of the principles, forces, processes and problems of the recent times.
		CO7. 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.
	INTRODUCTION TO HISTORY (S-III)	CO1. Orientation of the students about how history is studied, written and understood.
		CO2. Explanation of methods and tools of data collection.
		CO3. Understanding the meaning of Evolution of Historiography.
		CO4. Knowledge of Various Views of Historiography.
		CO5. Knowledge of the approaches to Historiography.
		CO6. Knowledge of the types of Indian Historiography.
		CO7. Ability to describe importance of inter-disciplinary research.
		CO8. Introduction of the basics of research.
		CO9. Knowledge of the recent research in History.
		CO10. Learn how to use sources in their presentation.
	HISTORY OF ASIA IN 20TH	CO1. Orienting the students with political history of Asia.



	CENTURY (1914– 1992) (S-IV)	CO2. Enabling the students to understand the economic transition in Asia during 20th Centuries.
		CO3. Understanding the important developments in the 20th century Asia in a Thematic approach.
		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.
Class	Course	Course outcomes (COs)
M.A.-I	CC – 1: History: Theory and Method	CO1. Students will be introduced to the information and importance of Historiography.
Sem-I		CO2. Students will be introduced to the different Methods and Tools of data collection.
		CO3. 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.
	CC – 2: Evolution of Ideas and Institutions in Early India	CO1. Students will be introduced to provide an understanding of the social, economic and institutional bases of early India.
		CO2. Students will be introduced to an understanding of early Indian history is crucial to understand Indian history as a whole.
	CC– 3: Maratha Polity	CO1. 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.
		CO2. 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:	CO1. 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	CO2. 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	CO1. Students can study the interdisciplinary approach of History.
Sem-II		CO2. 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.
		CO3. This curriculum develops Research ability and process of Research methodology in History
	CC - 5: Ideas and Institutions in Medieval India	CO1. Students will be introduced to provide an understanding of the social, economic and institutional bases of medieval India.
		CO2. Students will be understanding study of the medieval period
	CC - 6: Socio-Economic History of the Marathas (22203)	CO1. 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.
		CO2. Students will learn about the relationship between religion, caste, customs, traditions, class in 17th and 18th century Maratha Society.
		CO3. 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:	CO1. 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	CO2. 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.
		CO3. 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)	CO1. Students will be introduced to the student situate and interpret the cultural manifestations across historical memory which has contributed to the creation of the geopolitical region of Maharashtra
Sem-III		CO2. Students will be able to analyze the Marathas policy of expansionism and its consequences.
		CO3. They will understand the role played by the Marathas in the 17 th and 18 th century India.
		CO4. They will be acquainted with the art of diplomacy in the Deccan region.
		CO5. It will help to enrich the knowledge of the administrative skills and profundity of diplomacy.
	CC - 8: Intellectual History of the Modern World	CO1. It will enable students to develop the overall understanding of the Modern World.
		CO2. The students will get acquainted with the Renaissance, major political, socio-religious and economic developments during the Modern World.
		CO3. It will enhance their perception of the history of the Modern World.
		CO4. It will enable students to understand the significance of the intellectual, economic, political developments in the Modern World.
	CC - 9: Economic History of Modern India	CO1. Students will learn about the structural and conceptual changes in Indian economy after coming of the British.
		CO2. 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	CO1. This course attempts to study various approaches to peasant revolts and movements
	EC - 19: Peasant Movements in India (Medieval and Modern)	CO2. This Course helps the student to understand characteristics of peasant movements.
M.A.-II	CC -10: Modern Maharashtra: History of Ideas (1818-1960)	CO1. Student will develop the ability to analyze sources for 19 th century Maharashtra History.
Sem-IV		CO2. Student will learn significance of Regional History and Socio- religious reformism foundation of the region.
		CO3. It will enhance their perception of 19 th Century Maharashtra.
		CO4. Appreciate the skills of leadership and the Socio-religious System of the Maharashtra.
	CC - 11: Debates in Indian Historiography	CO1. Students will learn about some of the issues that that have been debated in Indian Historiography by historians.
		CO2. Students will be introduced to some perspectives with reference to Indian History.
	CC - 12: World after World War II (1945-2000)	CO1. To acquaint the student with the post-World War II scenario.



	CC - 12: World after World War II (1945-2000)	CO2. Students will be introduced to understand contemporary world after World War II from the historical perspective.
	Elective Courses	CO1. 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	CO2. Students will be introduced to the various British Acts, administrative system during 19 th century in India.
Department of Geography		
Programme Outcomes (POs) B.A.		
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 acquaint 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.
Programme Specific Outcomes (PSOs) B.A.		
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.



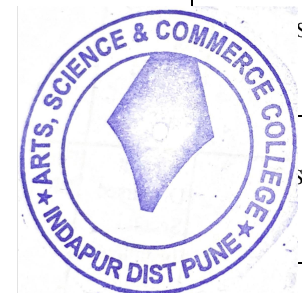
Programme Outcomes (POs) M.A.		
PO1		Will get knowledge of geographical terms, concepts, and theories and will be able to explain and find out the relation between geographical factors and processes.
PO2		Will be able to understand and apply to collect geographical data through qualitative and quantitative 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.
Programme Specific Outcomes (PSOs) M.A.		
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.
Course Outcomes (COs)		
B.A. Sem I	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.
(Annual)		CO1. Introduction to the basic concepts in disaster management system and classification of disasters.
		CO2. Study of various components of disaster management such as Preparedness, Response, Recovery, Mitigation and Rehabilitation.
		CO3. Study of causes and consequences of various climatic, geological, geomorphic and atmospheric disasters.
		CO4. Introduction to the global issues with causative and controlling factors of these issues.
		OR
	G-2 Gg-210 Element of Climatology and Oceanography	CO1. Knowledge of the basic principles and concepts in Climatology and Oceanography.
		CO2. Knowledge of the applications of Climatology and Oceanography in different areas and environment.
		CO3. Awareness of the Planet Earth and thereby to enrich the student's knowledge.
	S-1 Gg-220 Economic Geography	CO1. 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 geography.
		OR
	S-1 Gg-220 Tourism Geography	CO1. Introduction about the basic principles and concepts in Economic Geography
		CO2. Knowledge and 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
	S-2 Gg-201 Fundamentals of Geographical Analysis	CO1. Enabling the students to use various Projections and Cartographic Techniques.
		CO2. Knowledge of basic of Statistical data.
		CO3. 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	CO1. Knowledge of geography of our Nation.
		CO2. Awareness of the magnitude of problems and Prospects at National level.
		CO3. Understanding of the inter relationship between the subject and the society.
		CO4. Understanding of the recent trends in regional studies.
	G-3. Gg-310 Human Geography	CO1. This course is to acquaint the students with the nature of man-environment relationship and human capability.
		CO2. Adoption and modification of the environment under its varied conditions from primitive
		CO3. Identification and understanding environment and population in terms of their quality and spatial distribution pattern.
		CO4. Comprehension of the contemporary issues facing the global community.
		CO1. Introduction of the Agricultural activities and its relation with Geography.



	S-3 Gg-320 Agricultural Geography	CO2.Familiarization with new modern technical methods and their applications in Agricultural activities.
		CO3.Enabling the students to apply Previously knowledge in Problems and Prospects in agriculture
	S-4 Gg-301 Techniques of Spatial Analysis	CO1. Study of SOI toposheets with proper interpretation of the physical and cultural landscapes and landforms Over the hilly, plateau and plain regions.
		CO2. 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.
F.Y.B.Sc. Sem I	GG:111 Introduction to Physical Geography-I (Geomorphology)	CO1. Student understand the physical geography and its branches
		CO2. Students understand the interior of the earth, origin of continents and ocean begins.
		CO3. Student understand the crustal movement and internal movement of earth.
F.Y.B.Sc. Sem I	GG:112 Introduction to Physical Geography -II	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. Sem I	GG:113 Practicals in Physical Geography	CO1. Student introduced about maps and scales and types conversion of scale.
	(Ggeography of Atmosphere and Hydrosphere)	CO2.Student learnt the methods of relief representations
		CO3. Student got knowledge about SOI toposheet and draw profiles.
F.Y.B.Sc. Sem II	Introduction to Human Geography	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. Sem II	Population and Settlement Geography	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. Sem II	Practicals in Human 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.
Sc. Paper I Sem I	Geography of resources I	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.
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 Sem II	Geography of resources II	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 II Sem II	Watershed Management II	CO1. Students introduced to watershed Planning
		CO2. Students understood the importance of soil and water conservation
		CO 3. Students introduced watershed development programme
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.B.Sc. 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.
Sc. Sem IV	Fundamentals of Human Geography (Part II)	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 II)	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 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



		CO1. To acquaint the students with geography of India.
	Geography of India (Part II)	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.
	Techniques in Geomorphology and Soil Analysis (Practical III)	CO3. To train the students to handle these statistics towards analyzing the geographical problems.
		CO1. To acquaint the students with various techniques in geomorphic analysis.
		CO2. To familiarize the students with the basic methods of soil analysis.
Geography M.A.		
	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.
M.A. –I Sem-I	Practical's of serving	CO1. Student know the difference between geodetic and plane survey.
		CO2. Students learnt terms used in leveling like spot Hight.
M.A.-I		CO3. Student able to identified the parts of dumpy levels.
(Sem-II)	Principals of climatology	CO1. Student learnt the nature, scope, sub-divisional development.
		CO2. Student understands the atmospheric Composition and structure.
M.A.-I		CO3. Student were aware the atmospheric motion.
(Sem-I)	Principles of economic geography	CO1. Understood nature and scope of economic geography.
		CO2. Student understood formation and testing of hypothesis.
M.A.-I		CO3. Students understood various types of economics such as homestead and tribal.
(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		CO3. Student understood the various factors in influencing the dispersion and nucleation.
(Sem-I)		CO1. Student learn the drainage network and drainage stream.
	Practices in Physical Geography	
		CO2. Students understood few climatic elements.
M.A.-I(Sem-I)		CO3.Student understand the few climatic classification schemes.
	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.
M.A.-I(Sem-I)	Quantitative techniques in geography	CO1. Students introduced about geographical data.
		CO2. Student understood the analytical methods of descriptive statistics.
M.A.-I		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.
M.A.-I		CO3.Student learnt fundamental concepts of Math projection definition.
(Sem-II)	Geography of tourism	CO1. Student learnt the basic concept of tourism geography.
		CO2. Student learnt the types of tourism & Adventure of Tourism.
M.A.-I		CO3. Student learnt impact of tourism physical economic and social tourism.
(Sem-II)	Geography of Disaster management	CO1. Students introduced the concept and definition of disaster.
		CO2. Student understood the classification of disasters.
M.A.-I		CO3. Student understood the impact of disaster.
(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.
M.A.-I		CO3. Student studied geometric primitive's raster, vector. quad tree etc
(Sem-II)	Geo-informatics-II	CO1. Student learnt field work and survey published data and reports.
		CO2.Student studied the principles of remote sensing.
M.A.-I		CO3.Student understood atmosphere and surface.
(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.
M.A.-I		CO3.Student learnt various factors affecting on distributions of world population.



(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
M.A.-I		CO3.Student learnt various rural services.
(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.
M.A.-II		CO3 student aware of climate of India and Maharashtra.
(Sem-II)	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
M.A-II		CO3.Students understood how to fill the questionnaire in the village survey
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.
M.A-II		CO3. Student understood geometry of aerial photographs and database creations.
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.
M.A-II		CO3. Student understand social wellbeing quality of life and human development.
Sem-III	Practical of watershed analysis	CO1. Student learnt delineate the water shed from toposheet.
		CO2. Student calculated the basin perimeter, shape and area.
M.A-II		CO3. Student calculated linear aspects of drainage basin.
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
M.A-II		CO3.Student understand the concept of urbanization and urban demography.
Sem-III	Political Geography	CO1.Student learnt nature and scope of political geography.
		CO2.Student studied various approach to study of political geography.
M.A-II		CO3.Student understand the concept of nation, state and nation building. .
Sem-III	Practical in population and settlement geography	CO1. Student leant various demography Indices such as mortality.
		CO2. Student understood demographic transactions applied to Maharashtra.
M.A-II		CO3. Student studied the various indices related settlement geography.
Sem-III	Theoretical and applied geography	CO1. Student learnt different Geographers such as Greek, Roman & Indian.
		CO2. Student understand the paradigms, systems and models and types.



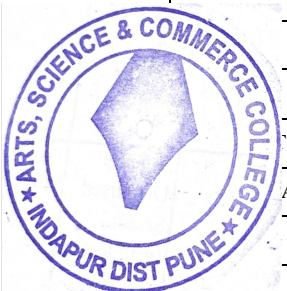
M.A-II		CO3. Student understood from this topic field survey.
Sem-IV	Principles of remote sensing	CO1. Student understood definition, history and principles of development.
		CO2. Student understood concept of radiation principles.
M.A-II		CO3. Student understood platforms types of their characteristics.
Sem-IV	Practical in remote sensing & GIS	CO1. Student understand the basic concept of remote sensing & GIS.
		CO2. Student understand principle point, fluidical marks
M.A-II		CO3. Student prepare the packet and mirror stereoscope to interpretation of aerial photograph.
Sem-IV	Geography of food security	CO1. Student learnt the economic growth factors affecting food security.
		CO2. Student acquired the knowledge of food justice.
M.A-II		CO3. Student learnt food security bill 2013
Sem-IV	Geography of health	CO1. Student understand the definition and development & achievement of health geography.
		CO2. Student understand the geographical factor attending human health
M.A-II		CO3. Student understood the health care system in India.
Sem-IV	Regional geography of SAARC countries	CO1. Student introduced about history of SAARC organization.
		CO2. Student understood geography of India.
M.A-II		CO3. Student learnt geography of Pakistan & Bangladesh.
Sem-IV	Natural and manmade Hazards	CO1. Student introduced about natural hazards and disasters.
		CO2. Students understood climatic hazards, storms, drought and floods.
M.A-II		CO3. Student learnt geological hazards.
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
M.A-II		CO3. Students worked on various projects and presented.
		CO4. Know the reagents that causes selective and complete reduction
		CO5. Interpret ¹ H NMR, ¹³ C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
		CO6. 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.
		CO7. Describe stereochemical problems in relation to chemical transformations.
		CO8. Correlate the chemical structure of biomolecules to reactivity: Functional groups, acid-base properties, Biochemical as well as synthetic routes.
		CO9. Describe different approaches to the formation of carbanions; discuss their structures,



		CO11.Stabilities/reactivates and applications in synthesis.
		CO12. Student should be able to plan syntheses using carbanions as nucleophilic
		CO13. Explain the origins of the observed Dia stereoselectivity.
Department of Psychology		
Program: B.A. (Psychology)		
Program 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
Program Specific Outcomes (PSOs)		
PSO 1		Understand the biological cognitive and social emotional process.
PSO 2		Understand the importance of heredity and environment in human development.
PSO 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.
Class	Course	Course outcome (COs)
F.Y.B.A	Foundation of Psychology	CO1. Understand the basic psychological processes and their applications in day-to-day life.
emester		CO2.Develop the ability to evaluate cognitive processes, learning and memory of an individual.
		CO3.Understand the importance of motivation and emotion of the individual.
		CO4.Understand the personality and intelligence of the individuals by developing their psychological processes and abstract potentials
	Introduction to Social Psychology	CO1. Understand the basics of social psychology.
		CO2.Understand the nature of self, concept of attitude and prejudice of the individual.



		CO3. Assess the interactional processes, love and aggression in our day today life.
		CO4.Understand group dynamics and individual in the social world.
F. Y. B. Sc	Foundations of Psychology	CO1.Understand the basic psychological processes and their applications in day-to-day life.
Semester		CO2.Develop the ability to evaluate cognitive processes, learning and memory of an individual.
		CO3.Understand the importance of motivation and emotion of the individual.
		CO4.Understand the personality and intelligence of the individuals by developing their psychological processes and abstract potentials.
	Experimental Psychology	CO1.Understand basic concepts of Experimental Psychology.
		CO2.Understand the different methods of psychophysics, learning, reaction time.
		CO3.Understand psychological tests, intelligence, aptitude and personality.
	Psychology Practical: Experiments	CO1.To acquaint the students the basic concepts of Experiments in Psychology.
		CO2.To acquaint the students how to conduct the experiments and to understand its practical applications and To introduce the students about basic knowledge of elementary statistics.
	Introduction to Social Psychology	CO1. Understand the basics of social psychology.
		CO2.Understand the nature of self, concept of attitude and prejudice of the individual.
		CO3.Assess the interactional processes, love and aggression in our day today life.
		CO4.Understand group dynamics and individual in the social world.
	Psychological Testing	CO1.Understand the basics of psychological testing.
		CO2.Understand and assessing the human abilities.
		CO3. Understand and evaluate behaviour analysis.
	Psychology Practical: Test	CO1.To acquaint the students the basic concepts of Tests in Psychology.
		CO2.To acquaint the students how to administer the tests and to understand its practical applications
		CO3.To introduce the students about basic knowledge of elementary statistics
S.Y.B.A.	Abnormal Psychology	CO1. To acquaint students with the recent classification of abnormality
(Annual)		CO.2.To help students to acquire the knowledge about the causes, symptoms and treatments of various types of psychological disorders.
	Developmental Psychology	CO1.To acquaint the students with the basic concepts of human development processes.
		CO2.To help the students to understand influences of various factors on development.
	Social Psychology	CO1.Acquaint Students with basic concepts, theories and applications of Social psychology
S.Y.B.A.	Industrial and Organizational Psychology	CO1.The emergence of Industrial and Organizational Psychology
(Annual)		CO2.The work done in Industrial and Organizational Psychology
		CO3.The significance of training, performance appraisal, leadership models



		CO4.The importance of Engineering Psychology
	Scientific Research and Experimental Psychology	CO1.To acquaint the students with the basic concepts of experimental psychology and research methodology
		CO2.To develop the spirit of scientific inquiry in the students,
		CO3.To help them generate ideas for research, as well as develop hypotheses and operational definitions for variable.
		CO4.To help students understand the basic steps in scientific research.
		CO5.To equip the students with the basic information and knowledge about test-administration and scoring, and interpretation of the obtained results
		CO6.To enable the students to undertake an independent small-scale research project.
	Psychology Practical: Test and Experiments	CO1.To familiarize the students with the use of elementary statistical techniques
		CO2.To give practical experience to the students in administering and scoring psychological tests and interpreting the scores
		CO3. To acquaint the students with the basic procedure and design of psychology experiments
		CO4.To encourage and guide the students to undertake a small-scale research project
		CO5.To encourage students to learn practical application through study tour and visit.
Department of Economics		
Program Outcomes (POs) for B. A. 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.
Program Specific Outcomes (PSOs) for B.A. 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
Department of Economics		
Program Outcomes (POs) for M. A. Economics		
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.
Program Specific Outcomes(PSOs) for M.A. Economics		
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



Course Outcomes (COs)		
F.Y.B.A.	Subject: - G-1 Indian Economic Environment	CO1. 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.
		CO3. Ability to compare and contrast Indian Economy with other world economies.
		CO4. 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.	Subject: -G -2 Financial System	CO1. Understand fundamentals of modern financial system.
		CO2. Understand the recent trends and developments in banking system.
		CO3. Understand the role of the Reserve Bank of India in Indian financial system.
		CO4. Provided the knowledge of various financial and non-financial institutions.
		CO5. Provided the students the intricacies of Indian financial system for better financial decision making.
S.Y.B.A.	Subject: - S – 1 Micro Economics	CO1. Developed an understanding about subject matter of Economics.
		CO2. Impart knowledge of micro economics.
		CO3. Clarified micro economic concepts
		CO4. Analyzed and interpret charts, graphs and figures
		CO5. Developed an understanding of basic theories of micro economics and their application.
		CO6. demonstrated that the theories discussed in class will usually be applied to real-life situations.
		CO7. Helped the students to prepare for varied competitive examinations
S.Y.B.A.	Subject: - S – II Macro Economics	CO1. Introduced students to the historical background of the emergence of macroeconomics
		CO2. Familiarized students with the differences between microeconomics and macroeconomics
		CO3. Familiarized students with various concepts of national income
		CO4. Familiarized students with Keynesian macroeconomic theoretical framework of consumption and investment functions
S.Y.B.A.	Subject: - S – II Macro Economics	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
		CO7. Familiarized students with the conceptual and theoretical framework of business cycles
		CO8. 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



T.Y.B.A.		
Subject: G-3 Indian Economic Development		
T.Y.B.A.	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
T.Y.B.A.		
Subject: G-3 Indian Economic Development		
T.Y.B.A.	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
M.A. Course Outcome		
M.A. – I Economics	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.
		CO1.Recognized, apply and analyze concepts and theories in public economics.



M. A – I Economics	Subject: - Public Economics I &II	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	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
M.A. – I Economics	Subject: - Agricultural Economics & labour Economics	CO1.Ability to analyze and evaluate the subject with reference to various aspects of agrarian economies.
		CO2.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.
		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.
M.A.-II Economics	Subject:- Macro Economics analysis-I & II	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.
		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 evaluate macroeconomic concepts, models and its use in real life situations.
M.A.-II Economics	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 analyze and demonstrate knowledge of the economic growth and development theories of economic growth and development
		CO3.Ability to analyze and demonstrate knowledge of the economic growth and development theories of economic growth and development
		CO4.Ability to analyze, evaluate and apply the growth and development concepts, role of human capital, etc. in real life situations
Economics	Subject:- Research Methodology & Research Project	CO1.Ability to develop demonstrated and examined topics under Economics to pursue research.
		CO2.Ability to evaluate and examine subject areas in economics and explore possibilities of research.
		CO3.Ability to develop, demonstrate and examine topics under Economics to pursue research.
		CO4.Ability to evaluate and examine subject areas in economics and explore possibilities of research.
		CO1.Ability to develop, demonstrate and examine various topics under Demography.



M.A.-II Economics	Subject:- Demography & Economics of Environment	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		
Program outcomes (POs) of Hindi B.A.		
PO-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.
PO-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.
PO-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 litterateurs 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:		Students became aware of the characteristics of poetry of Bharatendu era and Dwivedi era. Students got acquainted with the writers of modern time. 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		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.
Program outcomes (POs) of Hindi		
M.A. Hindi		
PO-1		Students studied the authors and works of major literary trends of the ancient, devotional and ritual periods.
PO-2		Students became aware of memoir literature. Students became aware of line drawing literature. Evaluative vision of students developed.
PO-3		Students should understand the applied aspects of linguistics. Students started understanding the usefulness of Students became aware of memoir literature.
PO-4		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		To elaborate the importance, deliverable, earlier and later effects of the representative works and creators of Hindi literature.
PO-6		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		To introduce the students to the official Hindi used in government offices through technical terms and abbreviations.
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		started understanding the usefulness of Students became aware of memoir literature.
PO-10		Students got information about phonetics and semantics. Students get acquainted with the branches of linguistics.



Programme Specific Outcomes (PSOs) M.A. Hindi		
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.
Course Outcomes (COs)		
F.Y.B. A		
	Vaikalpick Hindi prashn Patra 1	CO1To introduce Hindi poetic literature to the students.
		CO2To make one aware of Hindi story literature.
		CO3To develop essay writing skills
		CO4To make students aware of advertisement writing
		CO5To introduce Hindi poetic literature to the students.
S.Y.B. A		
	Vaikalpick Hindi prashn Patra -2	CO1To introduce students to poetic literature.
		CO2To introduce students to story literature.
		CO3To explain the Hindi factor system to the students.
		CO4Write the meaning of a word pair and explain its use in a direct sentence.
		CO5To give direct understanding of summary writing.
S.Y.B. A	Modern Hindi Satire and Practical Hindi s-1 sem-3	
		CO1To introduce students to satire text.
		CO2To make students understand the satire of the story.
		CO3To become aware of the art of interviewing.
		CO4To explain the mobile system of language



		CO5To make aware about Pallavan art.
	Distinctions in Literature S-1 sem-4	
		CO1To make students aware of the differences in literature.
		CO2To make students aware of the difference between words.
		CO3To introduce epic poetry, Khandakavya and Muktak poetry
		CO4To explain the nature of the drama.
		CO5To develop interest in dramatic acting among students.
	Medieval Poetry and Novel Literature S2 SEM-3	
		CO1To introduce Kabir's literature.
		CO2To make people aware of Mirabai's poetry.
		CO3To explain the concept of Indian novel.
		CO4To develop the art of evaluating a novel.
		CO5To self-expand the life values presented in literary works.
	Medieval Poetry and Novel Literature S2-SEM-4	
		CO1To introduce the literature of Kavir.
		CO2To make people aware of Mirabai's poetry.
		CO3To explain the concept of Indian novel.
		CO4To develop the art of evaluating a novel
		CO5To self-expand the life values presented in literary works.
	T.Y.B.A.	
	Annual Course: History of Hindi Literature: S3	CO1Students get acquainted with Hindi literary history writing Students studied the authors and works of major literary trends of the ancient, devotional and ritual periods.
		CO2Students became familiar with the period division and nomenclature of Hindi literary history. Students get acquainted with the background of Hindi literature.
		CO3Students 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.
		CO5To 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.
	Annual Course: History of Hindi Literature: -- S4	CO1Students get acquainted with Hindi literary history writing Students studied the authors and works of major literary trends of the ancient, devotional and ritual periods.
		CO2Students became familiar with the period division and nomenclature of Hindi literary history. Students get acquainted with the background of Hindi literature.
		CO3Students studied the characteristics of ancient, devotional and ritual literature. To make aware about the writing tradition of the history of Hindi literature.
		CO4Of 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.
		CO5To 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.
		CO6Students get acquainted with the science of phonetics
	Annual Course: Samanay Hindi: G3	
		CO1Students became aware of memoir literature
		CO2Evaluative vision of students developed
		CO3Dialogue writing skills and vision were developed in the students
		CO4To introduce the students to the official Hindi used in government offices through technical terms and abbreviations.
		CO5To acquaint the students with various aspects of journalism to get it done
		CO6From the writing tradition of the history of Hindi literature to make aware.
Course Outcomes (COs)		
Fifth semester Course	M.A.-I	
	Madhyayugin Kavya	CO1To introduce the medieval poetic trends of Hindi
		CO2To introduce the tendencies of contemporary poetic language
		CO3To develop creative skills
		CO4To introduce the works of a particular poet on the background of medieval poetic trends



		CO5To develop the ability to evaluate poetry on the basis of 4 texts.
Semester Course		
SIX	Katha sahitya	
		CO1To acquaint with the genre of satire, essay, sketch and memoir.
		CO2To conduct linguistic study of the curriculum.
		CO3To develop basic writing skills.
		CO4To explain the nature of the drama.
		CO5To develop interest in dramatic acting among students.
Six	Bhartiya kavyashastra	
Semester Course		
		CO1To acquaint with the development and trends of Hindi novel literature.
		CO2To develop the ability to taste and study novels.
		CO3To communicate the literary values presented in the texts.
		CO4To develop the vision of evaluation.
		CO5To introduce the development of western poetics.
Semester Course	Natkar Mohan Rakesh	
Fifth		
		CO1To introduce the form and structure of drama.
		CO2To introduce you to drama composition and theatre.
		CO3Will introduce the development of Hindi drama and theatre.
		CO4To develop the vision of theater appreciation and evaluation through the plays of Mohan Rakesh.
		CO5To develop drama skills.
	Kathettar gadya sahitya	
		CO1To introduce the development of Indian poetics
		CO2To make aware of the major sects of Indian poetics



		CO3 To develop the ability to judge the merits and value of a composition
		CO4 To develop critical vision.
	Shodh pravidhi	
		CO1 To introduce the development of western poetics.
		CO2 To become aware of the thoughts
		CO3 Theories and major movements of western thinkers.
		CO4 To give creativity, appreciation
		CO5 Critical vision to the students
	Pachaytya Kavya Shastra	
		CO1To introduce the form and structure of drama.
		CO2To introduce you to drama composition and theatre.
		CO3Will introduce the development of Hindi drama and theatre.
		CO4To develop the vision of theater appreciation and evaluation through the plays of Mohan Rakesh.
		CO5To develop drama skills
	Hindi upnyas sahitya	
		CO1To make one aware of the novel genre.
		CO2To become aware of the story genre
		CO3To communicate the values expressed in texts.
		CO4To develop a critical eye.
		CO5To develop creative skills.
	Research Techniques	
		CO1To make students aware of research techniques.
		CO2To develop research vision.
		CO3To introduce new research trends
		CO4To develop research process



		CO5To develop dissertation writing skills.
	M.A. second year	
Seven semester Course	Modern Poetry	CO1 Students get acquainted with modern poetry
		CO2 The vision of poetry appreciation developed among the students
		CO3 The art of poetic creativity developed among the students
		CO4 Students get acquainted with idealistic, shadows and other poems in modern poetry.
		CO5 Students studied empathy and craft.
Seven semesters	Annual Course: Linguistics: S4	
		CO1Students get acquainted with the nature of linguistic
		CO2Students should understand the applied aspects of linguistics
		CO3Students get to know the vocabulary of Hindi
		CO4Students get information about phonetics and semantics
		CO5Students get acquainted with the science of phonetics
Seven semester Course	Modern Poetry	
		CO1Students get acquainted with modern poetry
		CO2The vision of poetry appreciation developed among the students
		CO3The art of poetic creativity developed among the students
		CO4The art of poetic creativity developed among the students.
		CO5Students studied empathy and craft
Eight semester	Modern Poetry	
		CO1Students got acquainted with idealistic, shadows and other poems in modern poetry
		CO2The art of poetic creativity developed among the students
		CO3Students became aware of poetic sensitivity and artistic study the vision of poetry appreciation developed among the students
		CO4The vision of modern poetry studies developed in the students get acquainted with modern poetry.
		CO5Students became aware of poetic sensitivity and artistic study



Seven semester	Linguistics	
		CO1Linguistics students get acquainted with the nature of linguistics
		CO2Students get acquainted with the applied side of linguistics
		CO3Students became aware of the definition, nature and scope of Linguistics
		CO4Students became aware of the definition, nature and scope of Linguistics
		CO5Students get acquainted with phonetics
Eight semester	development of Hindi language	
		CO1Indian Folklore Students get acquainted with the nature and importance of folklore.
		CO2Students get acquainted with the prevalence of folklore Students get acquainted with the folk literature of Maharashtra
		CO3Maharashtra Students studied the history of folklore Students became aware of folk literature, folk songs, folk drama, and folk tales.
		CO4Students became aware of folk tales and folk music, folk language
		CO5Students became aware of folk literature, folk songs, folk drama, and folk tales
Seven semester	History of Hindi Literature	
		CO1Students became aware of the emergence and development of Hindi prose
		CO2Students became familiars, Chhayavad; Progressivism. Students became familiar with experimentalism and new poetry
		CO3Students became aware of the historical vision of the students.
		CO4Students became familiar with the modern period of the history of Hindi literature
		CO5Students became aware of Chhayavad. Got acquainted with the poetic characteristics of progressivism, experimentalism.
Eight semester	History of Hindi Literature (Modern Period)	
		CO1Students became familiar with Dwivedi era, Chhayavad, Progressivism
		CO2Major literary trends of Dwivedi era, Chhayavad, Progressivism, and new poetry
		CO3Became familiar with the Dwivedi era, Chhayavad, Pragmatism, and the authors and creations of new poetry
		CO4Students 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



Seven semester	Hindi criticism	
		CO1 Students became aware of the nature and different types of criticism
		CO2 Students were introduced to the critical paradigms of the major critics of Hindi
		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
		CO5 Students became aware of the socio-cultural background and major trends of the period
Eight semester	Indian folk literature	
		CO1. Students get acquainted with the nature and importance of folklore
		CO2 Students got acquainted with the prevalence of folklore
		CO3 Students studied the history of folklore
		CO4 Folk language Students became aware of folk proverbs, idioms, proverbs, riddles aware of the collection
		CO5 Indian Folklore Students get acquainted with the nature and importance of folklore
Programme Outcomes (POs), Programme Specific Outcomes (PSOs) & Course Outcomes (COs) for Science Faculty		
Department Of Botany		
B.Sc. Programme Outcomes (POs) 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.
	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.
	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 Specific 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.
Class	Course	Course Outcome (COs)
F. Y. B. Sc.	Sem-I	
	Bo 111 – Plant Diversity	CO1.Understand about the general characters, classification and life cycles of different plant groups.
		CO2.Understand about the economic important of Algae, Fungi and Lichens and Bryophytes.
		CO3. Understand the life cycles of selected genera.
		CO4. This course will help the student to understand the diversity of plants and evolutionary process in plant kingdom
		CO5.To make the students aware about conservation and sustainable use of plants.
	Bo 112-Industrial Botany I	CO1.Gain thorough knowledge about various plant groups from primitive to highly evolved plants.
		CO2. Become aware of applications of different plants in various industries.
		CO3. Understand how botanical knowledge could be applied for crop improvement.
		CO4. To highlight the potential of these studies to become an entrepreneur.



		CO5. To equip the students with skills related to laboratory as well as industries-based studies.
		CO6.To address the socio-economic challenges related to plant sciences.
		CO7. To make the students aware about conservation and sustainable use of plants.
	Bo -111: Plant Morphology and Anatomy	CO1.Understand the nature and basic concepts of plants.
		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.
	Bo 112-Industrial Botany II	CO1. Students will be able to recognize different parts of plants used in plant-based industries.
		CO2 . This course will provide practical knowledge to establish small or large-scale plant-based industries.
		CO3.Gained knowledge about employment opportunities in the field of botany.
		CO4. Gained knowledge about start-up opportunities in the field of botany.
		CO5.Students will be able to recognize different parts of plants used in plant-based industries.
	Bo 113 Practical based on Paper I and II	CO1. Students understand the life cycle of algae, fungi, lichen, bryophytes.
		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 learn to differentiate different types of Inflorescence and Fruits.
		CO8. Students understands internal organization of monocot and observing under Microscope.
		CO9. This course will provide practical knowledge to establish small or large-scale plant-based industries.
		CO10. Students will get an idea to establish a plant-based natural product industry.
		CO11. This course will make the students self-reliant.



S. Y. B.Sc.	SEM-I	
	Bo.211- Taxonomy and plant community	CO1. Knowledge regarding Angiosperm Taxonomy.
		CO2. Understanding of Systems of classification with their merits and limitations- a) Artificial system- Carl
		Linnaeus, b) Natural system -Bentham and Hooker, c) Phylogenetic system- Engler and Prantl
		CO3. Awareness of Taxonomic literatures w.r.t. Flora, monograph, revisions, manuals, journals, periodicals and references books.
		CO4. Study of Sources of data for Systematics such as Morphology, Anatomy, Cytology, Embryology
		And Phytochemistry
		CO5. Study of Botanical Nomenclature
		CO6. Study of Plant Families with reference to systematic position, salient features, formula, floral diagram and any five examples with their economic importance – Annonaceae.
		CO7. Meliaceae, Myrtaceae, Rubiaceae, Solanaceae, Asclepiadaceae, Euphorbiaceae
		CO9. Study of Computer in taxonomy
		CO10. Introduction to ecology includes Definition, Concept, Autecology and Synecology.
	Bo. 212 Plant Physiology	CO1. Student learn basic introduction about plant physiology.
		CO2. Understanding of the Scope and applications of plant physiology.
		CO3. Learning of the Physico-chemical properties of water.
		CO4. Study of the phenomenon like Diffusion, Osmosis, Plasmolysis, Imbibition.
		CO5. Understanding of Mechanisms of water absorption.
		CO6.Study of the Physical force theories of Ascent of sap.
		CO7. Learning of the Mechanism of opening and closing of stomata.
		CO8. Study of processes like Guttation and Exudation and their significance in plant metabolism.
		CO9. Study of Factors affecting growth.
		CO10.Knowledge of Properties and to understand practical applications of auxins, cytokinin's, gibberellins, ethylene gibberellins, ethylene and abscisic acid.
		CO11. Learning of types of seed dormancy Methods to break seed dormancy.
		CO12. Study of physiology of flowering with respect to Photoperiodism, Phytohormones, and Vernalization.
		CO1. Development of various techniques in the field of Taxonomy, Anatomy, Physiology, Embryology,
		Ecology and Biotechnology
		CO2. Elaboration of Plant Systematics with description of flowering plants in botanical terms for Plant
		families like : i. Myrtaceae, ii. Rubiaceae, iii. Solanaceae, iv. Asclepidaceae, v. Amaryllidaceae



	Paper-III Practical	CO3. Study of Ecological adaptations in Hydrophytes and Xerophytes.
		CO4. Study of Vegetation by List-count Quadrat method.
		CO5. Study of tools of Taxonomy and Ecological instruments, Spectrophotometer, Centrifuge and pH meter.
		CO6. Determination of WHC and pH of soil
		CO7. Verification of Plasmolysis, DPD, rate of transpiration, Curling Experiment, Imbibition Pressure, Arc Auxanometer with experimental proofs.
		CO8. Testing seed viability by TTC method
		CO9. Study of Plant Anatomy with respect to Epidermal tissue system, mechanical tissues and their distribution
		in root, stem and leaves, normal secondary growth in dicot stem – Annona, Moringa, anomalous
		secondary growth in Bignonia and Dracaena stem
		CO10. Study of Plant Embryology with respect to tetrasporangiate anther, types of ovules and dicot and monocot embryo.
		CO11. Estimation of Citric acid in Aspergillus fermentation.
		CO12. Study of the production of single cell protein production i.e. Spirulina, Yeast and study of of commercial products
		CO13. Demonstration of fermentation and fermentation products, separation of plasmid DNA by agarose gel electrophoresis and enzyme immobilization
	SEM-II	
	Bo.221 – 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 Anamalous 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.
		CO1.Students learn the concept, scope and importance of plant Biotechnology.



	Bo.222 - 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.
	Paper-III Practical	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.



T.Y.B.Sc. (2015)	Bo.345- Plant Biotechnology	CO5. Students know about Ethnology, Economic Botany.
		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.
	Practical 1 Bo.347	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.
		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.
	Practical 2 Bo. 348	CO10. Understands the callus induction, application of biofertilizers, transgenic plants.
		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.
		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.
	Practical 3 Bo.349	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 statistical 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		Program Outcomes (POs)
PO1		Obtain knowledge with facts and figures related to various subjects in basic sciences such as
		Physics, Chemistry, Biology, Mathematics, etc.
PO2		Understand the fundamental concepts, principles, and scientific theories related to various
		Scientific phenomena and their relevance in daily life.
PO3		Acquire expertise in handling scientific instruments, planning and performing laboratory
		Experiments nothing losing the observations and drawing logical inferences from them.
PO4		Evaluate the given scientific data critically and systematically and drawing objective conclusions.
PO5		Able to think creatively (divergently and convergent) to propose novel ideas in explaining facts or
		providing new solution to the problems.
PO6		Develop the scientific outlook not only with respect to science subjects but also in all aspects related to life.
PO7		Absorb ethical, moral and social values in personal and social life leading to highly cultured and
		civilized personality.
PO8		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		Obtain knowledge with facts and figures related to various subjects in basic sciences such as
PO10		Acquire expertise in handling scientific instruments, planning and performing laboratory
PSOs		Program Specific Outcomes (PSOs)
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.
F. Y. B. Sc.		Course Outcomes (COs)
Semester-I	Descriptive Statistics Paper-I	CO1. Building of different electronic circuits for specific applications is the main aspect of this course.
		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.
	Discrete Probability Paper-II	CO2. Finding the probabilities of events.
		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.
	Practical Course Paper-III	CO2. Interpretation of summary statistics of computer output.
		CO1. Computation of the correlation coefficient for bivariate data and interpret it.
		CO2. Analysis of data pertaining to attributes and to interpret the results.
		CO3. Summary and analysis of the data using computer.
	Descriptive Statistics Paper-I	CO4. Application of statistics in the various field.



	Discrete Probability Distribution Paper-II	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.
S. Y. B. Sc. Semester-I &II		CO2. Fitting the binomial distribution.
		CO3. Analysis data pertaining to discrete and continuous variables and to interpret result.
		CO4. Computing the probabilities of bivariate distributions.
	ST-211 Discrete Prob.Distri.	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.
	ST-221 Statistical Methods Paper-I	CO3. Knowledge and study of different command of R-Software to analyze the statistical data.
		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-212 Continuous probability Distributions.	CO1. Study of the standard univariate continuous probability distributions.
		CO2. Knowledge and study of bivariate continuous probability distributions.
	ST-222 Sampling Distributions And Inference Paper- II	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.
T. Y. B. Sc	Paper I Distribution Theory (ST:331)	CO1. Knowledge and study of standard univariate& bivariate continuous probability distributions like Beta Distribution. of first and 2nd type, Laplace, Cauchy, Weibull& Bivariate normal distribution type, Laplace, Cauchy, Weibull& Bivariate normal distribution.
		CO2. Knowledge and study of probability distributions of different Order statistics.
	Paper II Actuarial Statistics (ST:341)	CO1. Develop a high- quality training in Actuarial statistics locally and internationally.
		CO2. Provision of an opportunity for research in actuarial statistics and development of Insurance (n-year term Life insurance, Endowment Insurance, Whole life insurance) product.
		CO3. Knowledge and study of Annuities (Annuity certain, Annuity Immediate, Discrete life annuities).
		CO4. Knowledge and study of Premiums for a variety of insurances products
		CO1. Knowledge and study of point and interval estimation methods for making inferences about unknown population parameters on the basis of samples.
	Paper II Estimation Theory (ST:332)	CO2. Study and estimation of methods like Method of moments & Maximum likelihood method.
		CO3. Study of different criterion of estimators like unbiasedness, variance of the estimator (UMVUE and MVBUE), Sufficiency, Efficiency, Consistency.
		CO4. Study of interval estimation
	Paper III Testing of	CO1. Knowledge and study of parametric tests:- MP, UMP tests, Likelihood ratio tests and sequential



Hypotheses (ST:342)	CO1.Probability ratio tests (SPRT).
	CO2. Study of Non- Parametric tests:- Sign test, Wilcoxon signed rank test, Mann-Whitney test, Run test and Kolmogorov-Smirnov test.
Paper IV Sampling Methods (ST:333)	CO1.Estimation of standard error.
	CO2. Knowledge and study of determination of sample size.
	CO3. Knowledge and study of the role of sample survey in research methodology.
Paper V Statistical Quality Control (ST:343)	CO1. Knowledge and study of online and offline process control methods.
	CO2. Knowledge and study of control chart for variables (X-bar, R-chart) and Attributes (P-chart, C-chart)
	CO3. Knowledge and study of capability, capability ratio, capability indices (Cp and Cpk).
	CO4. Knowledge and study of acceptance sampling plans for attributes.
Paper VI Design Of Experiments (ST:334)	CO1. Knowledge and study of the ANOVA: Concepts and Techniques.
	CO2. Study and knowledge of different design of experiments like CRD, RBD and LSD.
	CO3. Study and knowledge of efficiency of design (RBD over CRD, LSD over CRD and LSD over RBD)
	CO4. Study and knowledge of analysis of covariance in CRD and RBD.
	CO5. Study and knowledge of factorial experiments and confounding (Total and Partial).
Paper VII Operations Research (ST:344)	CO1. Study and knowledge of formulation of linear programming problems (LPP).
	CO2. Study and knowledge of graphical method for obtaining optimal solutions to LPP.
	CO3. Study and knowledge of simplex method, Big-M method and Duality for obtaining optimal solutions to LPP.
	CO4. Study and knowledge of Transportation Problem (T.P.) and Assignment Problem (A.P.).
	CO5. Study of Critical Path Method (CPM) and Project Evaluation and Review Techniques (PERT).
Paper VIII C Programming (ST:335)	CO1. Study basic concepts of C- language.
	CO2. Development of logic and programming skills.
	CO3. Development of various C programs for descriptive statistics and C programs for correlation coefficient and regression equation.
Paper IX Stochastic Process. (ST:345)	CO1. Study of finite Markov chain and transition probability matrix.
	CO2. Study of classification of states (Recurrent, transient and ergodic)
	CO3. Knowledge and study of periodicity of Markov chain and stationary distribution.
	CO4. Knowledge and study of Poisson process and Compound Poisson process.
Paper X Regression analysis (ST:336)	CO1. Explanation of variability in dependent variable by means of one or more independent variable.
	CO2. Estimation of the least square parameters of simple, multiple and logistic regression equation and interpret parameters
	CO3. Estimating the parameters of weighted least squares and interpret residual plot.
Paper XI Statistical computing	CO1. Knowledge and study of the basic concepts of R- Software and graphical presentation of data using R- software.



	using R-Software (ST:346)	CO2. Study different measures of central tendency, dispersion, Coefficients of skewness, kurtosis, correlation, regression and probability and probability distributions using R- Software.
		CO3. Study parametric and non- parametric tests using R –Software.
	Paper XII Practical Paper -I (ST:347)	CO1. Fitting the lognormal distribution and model sampling from Cauchy and Laplace distributions.
	Paper XIII Practical Paper -II (ST:348)	CO2. Testing the parametric and non- parametric hypotheses.
		CO3. Estimation of population mean, population total and population proportion with standard errors using Sampling methods.
		CO4. Construction of life tables and computation of benefit premiums for insurance products
Department of Mathematics		
Program Outcomes (POs)		
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.
Program Specific Outcomes (PSOs)		
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.
		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.
		Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study.
Course Outcomes (COs)		
	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.
Sem-II	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 dimensions
	(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	Multivariable Calculus.	CO1.Study calculus of functions of several variables.
Semester-I	Paper I	CO2.Applications of double and triple integration.
	Discrete Mathamatics. Paper II	CO1.Permutation and combination
		CO2.Prepare truth table.
	Practical Course.	CO1.Imparting skill to solve problems.
Semester-II	Linear Algebra Paper II	CO1.Knowledge of vector spaces and subspaces.
		CO1.Finding of the basis and dimension of vector spaces.
		CO1.Knowledge and study Linear Operators on vector spaces and their properties.
		CO1.Study Inner Product spaces and properties, Gram-Schmidt Process.
	Multivariable Calculus Paper II	CO1. Limit, continuity and differentiation of vector valued function
		CO2.linear transformation
	Practical Course.	CO1.Imparting skill to solve problems.
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.ITheory
	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.
Department of Physics		
Program 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 students in understanding theoretical and mathematical development of physics
PO9		To learn Physics through experimentation
PO10		To develop Experimental skills
Program 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		
		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 in understanding theoretical and mathematical development of physics
		PO 9To help students to build-up a progressive and successful career in Physics.
		PO 10To train students in skills related to research, education, industry, and market.



c. Physics

Program Outcomes (POs)

	Program 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.
Course Outcomes (COs) for B.Sc. Physics		
Class	Course	Course outcome
F.Y. B.Sc. Semester I		
	PHY-111 Mechanics and Properties of Matter	CO1.To understand concepts in topic motion, work energy, fluid 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
	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
F.Y. B.Sc. Semester II	PHY 211 Mathematical Methods	CO 1 Understand the complex algebra useful in physics courses. CO 2. Understand the concept of partial differentiation. CO 3. Understand the role of partial differential equations in physics. CO4. Understand vector algebra useful in mathematics and physics. CO5.Understand the singular points of differential equation.



S.Y. B.Sc. Semester I	(PHY 212) Electronics I (Paper-II)	CO1. Apply laws of electrical circuits to different circuits.
		CO2. Understand the relations in electricity and properties and working of transistors.
		CO3. Understand the functions of operational amplifiers.
		CO4. Design circuits using transistors and operational amplifiers.
		CO5. Understand the Boolean algebra and logic circuits.
S.Y. B.Sc. Semester II	OR	
	PHY-222: Instrumentation	CO1.Understand the functions of different instruments.
		CO2.Use different instruments for measurement of parameters.
		CO3. Design experiments using sensors.
	(PHY221) Oscillations, Waves and Sound (Paper-I)	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 222) Optics (Paper-II)	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 223) Practical Paper III (Annual)	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.
		CO4. Set up experimental equipment to implement an experimental approach.
	PH331 : Mathematical Methods in Physics-II	CO1. Calculate with vectors and scalars in physics.
		CO2. Determine the difference between Complex numbers and Real number.
		CO3. Learn geometrical representation of complex numbers.
		CO4. Find Fourier Series of periodic function,
		CO5. Use Laplace transform as tools of Physics.
	PH332: Solid State Physics	CO1. Have a basic knowledge of crystal systems and spatial symmetries.
		CO2. Be able to perform structure determination of simple structures.
		CO3. Know the significance of Brillouin zones,



T.Y.B.Sc. Semester III	PH332: Solid State Physics	CO4. Know Bloch's theorem and what energy bands.
		CO5. Know the fundamental principles of semiconductors, including pn-junctions, and be able to estimate the charge carrier mobility and density.
		CO6. Be able to account for what the Fermi surface is and how it can be measured.
	PH 333: Classical Mechanics	CO1. Training the students of B. Sc. class in the Mechanics of the particles.
		CO2. Motion of central force, scattering of particles, Lagrangian and Hamiltonian formalisms to a scope that they understand the Concept and Laws.
	PH334: Atomic and Molecular Physics	CO1. Understand the Atomic structure
		CO2. Understand the One and two valence electron systems
		CO3. Study the Zeeman Effect, Raman Effect
		CO4. Understand the various spectroscopy
	PH335: Computational Physics	CO1. Understand the Concepts of programming
		CO2. Understand the concept of C Programming
		CO3. Understand the Arrays and Pointers in C
		CO4. Understand the User Defined Function in C
	PH-336 Elective I: Astronomy and Astrophysics	CO1. Study the Fundamentals of Astronomy
		CO2. Refer the Astronomical Instruments
		CO3. Understand the Star and Star Systems
		CO4. Study of Galaxies, Dark Matter and Dark Energy
	PH-341: Classical Electrodynamics	CO1. To understand Electrostatics and Magnetostatics
		CO2. To understand the Concept of electromagnetic induction, Faraday's law, Lenz' law, generalization of Ampere's law.
		CO3. To understand the concepts of Electrodynamics.
	PH-342: Quantum Mechanics	CO1. To understand The Schrodinger equation
		CO2. To study the applications of Schrodinger Steady state equation
		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



T. Y. B. Sc. Semester IV	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 CO4. Result analysis and conclusions
	Course Outcomes (COs) M. Sc.	
Semester I	PHYUT 501 Classical Mechanics	CO1. Constrained motion and lagrangian formulation CO2. Vibrational principles and Hamilton formulation CO3. Canonical transformation and poisson bracket
	PHYUT 502 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
	PHYUT 503 Mathematical Methods In Physics	CO1.To understand the linear spaces and operators CO2. To understand the Matrix Algebra CO3. To understand the Special Functions CO4. To understand the Fourier series and Integral transforms



Semester-II	PHYUT504 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
	PHYUT505: 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
	(PHYUT601) 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.
	(PHYUT602) 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
	(PHYUT 603) Quantum Mechanics	CO1.To understand the Revision and general formalism CO2.To understand the Representation of States – Dirac notation CO3. To understand the Angular Momentum CO4.To understand the Approximation Methods
	PHYUT604: LASERS	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
	(PHYUT 605) Experimental Techniques in Physics II	CO1. To understand the Radiation Sources, Detectors and Sensors CO2. To understand the Structural Characterization and Thermal Analysis CO3. To understand the Morphological and Magnetic Characterization CO4. To understand the Spectroscopic Analysis
	(PHYU P606) Physics Lab II	CO1. Laboratory course II deals with the experiments based on fundamental concepts in Physics
	(PHYUT701) Statistical Mechanics In Physics	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
	(PHYUT702) Quantum Mechanics	CO1. Understanding the basic principles of quantum mechanics. CO2. Solve the Schrodinger equation to obtain wave functions for some basic, physically important potential, and estimate the shape of the wave function based on the shape of the potential. CO3. Understand the role of uncertainty in quantum physics, and use the commutation relations of operators to determine whether or not two physical properties can be simultaneously measured. CO4. Develop a knowledge and understanding of perturbation theory and level splitting.
	(PHYDT703) Energy Studies I	CO1. The outcome of the course on Science of renewable Energy Sources is to students to the basics of the alternative energy sources like solar energy, hydrogen energy, etc. CO2.To understand the Radiation and Its Measurements
	(PHY DT 704) Astronomy And AstrophysicsI	CO1.To Understand the Astronomical Scales & Basic Concepts of Positional Astronomy CO2. To Understand the Astronomical Techniques and Physical Principles CO3.To Understand the Sun and Stellar Structure CO4. To Understand the Star Formation, Nucleosynthesis and Stellar Evolution
	PHYDT705: SPECIAL LAB I	1) ASTRONOMY CO1- To understand the polar align an astronomical telescope CO2- To understand the Computation of a lunar eclipse

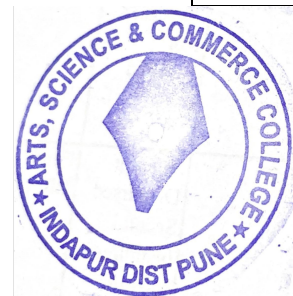
Semester-III



	PHYDT705: SPECIAL LAB I	CO3- To understand the Computation of a solar eclipse 2) ENERGY STUDIES CO1- To understand the Determination of Calorific value of Wood/Cow dung CO2- To understand the Study of Photovoltaic a Characteristics of Solar Cell CO3- To understand the Study of power versus load characteristics of Solar Power Photovoltaic Systems
	(PHYDP 706) Physics Lab III (5 Credits)	CO1. Understanding of the general concepts in C language. CO2. Application of Physics concepts in solving problems. CO3. Familiarization of statements and array of C language. CO4. Emphasis on the significance of C+ theory.
	(PHYUT801) 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.
	(PHYUT802) Material Science	CO1. Various production techniques and applications. CO2. Fracture analysis for different metals. CO3. Strengthening mechanisms and Applications of metallic and non-metallic materials.
Semester IV	(PHYDT803) Energy Studies II	CO1. The outcome of the course on Science of renewable Energy Sources is to expose the students to the basics of the alternative energy sources like solar energy, hydrogen energy, etc. CO2- To understand the Photothermal applications of Solar Energy CO3- To understand the Hydrogen Energy CO4- To understand the Wind and Bio Energy
	(PHYDT804) Astronomy And AstrophysicsII	CO1- To understand the Basic Structure and Properties of the Milky Way CO2- To understand the Galaxy Morphology, Hubble's Classification of Galaxies CO3- To understand the Astronomical Techniques CO4- To understand the Large Scale Structures & the Expanding Universe
	(PHYUP805) Special Lab II	1) Astronomy and Astrophysics CO1- To understand the to study the characteristics of CCD camera CO2- To understand the to polar align an astronomical telescope 2) Energy Studies CO1- To understand the Determination of heat Loss Coefficient in Flat Plate Collector CO2- To understand the Study of Hot Water system
	(PHYUP806) Project (5 Credits)	CO1. Creation of opportunity to participate in some ongoing research activity

Department of Chemistry

Class	Course Name	M.Sc. Programme outcomes (POs)
Sc. -I & II	PG	After completing M.Sc. Chemistry programme, students will be able to -
		PO1: Demonstrate and apply the fundamental knowledge of the basic principles in the field of organic Chemistry and Analytical chemistry.
		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	Course Name	M.Sc. Programme Specific outcomes (PSOs)
M. Sc. - I & II	PG	After completing M.Sc. Chemistry programme, students will be able to -
		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.
Program outcomes of Chemistry (B.Sc.)		
Class	Course Name	B.Sc. Programme Outcomes (POs)
		PO2: 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.
		PO3: 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.
		PO4: 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.
		PO5: 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.
		PO6: 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.
		PO7: 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.
		PO8: 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.
		PO9: 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.
		PO10: 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.
Class	Course Name	B.Sc. Programme Specific outcomes (PSOs)
		PSO1: Core competency: The chemistry graduates are expected to gain knowledge of the fundamental concepts of chemistry and applied chemistry through theory and practical. These fundamental concepts would be reflected in the latest understanding of the field to keep continues its progression.



F. Y. B. Sc. To T. Y. B. Sc.	UG	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.
Class	Course Name	Course outcomes
		Semester -I
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
	CH- 103: Chemistry Practical Course I	CO.1. Importance of chemical safety and Lab safety while performing experiments in laboratory
		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
		Semester -II
	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



	CH- 203: Chemistry Practical –II	CO.1. Inorganic Estimations using volumetric analysis CO.2.Synthesis of Inorganic compounds CO.3. Analysis of commercial products CO.4. Purification of organic compounds CO.5. Preparations and mechanism of reactions involved
S.Y.B.Sc..		Semester -I
	CH-211 : Physical and Analytical Chemistry	CO1. Student should learn Concept of kinetics, terms used, rate laws, types of order CO2. Understand difference between thermal and photochemical reactions CO3. Students should learn Concept of distribution of solute amongst pair of immiscible solvents CO4. Students should learn Meaning of error and terms related to expression & estimation of errors CO5. A student should know Basic principles in qualitative analysis
	CH-212 :Organic & Inorganic Chemistry	CO1.Able to find R/S configuration in compounds containing two chiral centers. CO2.Suggest synthetic route for preparation of various heterocyclic compounds. CO3. Write and complete various reactions of heterocyclic compounds. CO4.To know the different methods for separation of gangue or matrix from metallic compounds. CO5. To know physico-chemical principles involved in electrometallurgy.
		Semester-II
	CH-221 : Physical and Analytical Chemistry	CO1. The student should able to know Free energy The student should able to know CO2. Interpret the experimental data on the basis of theoretical principles. CO3. Interpretation of temperature composition diagram. CO4. Meaning of equivalent weight, molecular weight, normality, molality, primary and secondary standards.
	CH-222 : Organic & Inorganic Chemistry	CO1. Student should understand Concept of different reagents used in the one type of conversion CO2.Suggest synthetic route for preparation of various heterocyclic compounds. CO3.Suggest synthetic route for preparation of various heterocyclic compounds. CO4.To know position of d-block elements in periodic table.
	CH-223 : Chemistry Practical	CO1. After completion of practical course student should be able to Verify theoretical principles experimentally CO2.Interpret the experimental data CO3.Improve analytical skills CO4. Correlate the theory and experiments and understand their importance
		SEMESTER-III
	CH-331: Physical Chemistry	CO1.Apply mathematical equation for order of reaction. CO2.Estimate the energy of activation and order of reaction. 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
		CO6.Understand the Retero synthetic 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 thermo 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	CO1. Know the role of agriculture chemistry and its potential
		CO2. Understand basic concept of soil, properties of soil & its classification on the basis of pH
		CO3. Know the different plant nutrients, Their functions and deficiency symptoms
		CO4. Understand importance of manures as compared to chemical fertilizers'
		CO5. Understand the importance of green manuring
		CO6. Have the knowledge of the use of proper the plants
		SEMESTER-IV
	CH-341: Physical Chemistry	CO1.What is mean by Electrochemical cell with specific example
		CO2. Origin of EMF of electrochemical cell.
		CO3Distinguish 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
		CO1.The meaning of term f-block elements, Inner transition elements, lanthanides, actinides.



	CH-342: Inorganic Chemistry	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	CO1. Definition and formation of carbanions
		CO2. Possible mechanism of some known name reactions involving carbanions
		CO3. Various steps involved in the synthesis of some molecules
		CO4. What is the interaction of radiation with matter
		CO5. Types of energy levels with diagram
		CO6. Brief idea about the advantages of spectroscopic methods
	CH-344: Analytical Chemistry	CO1. Principles of solvent extraction.
		CO2. Difference between KD and D
		CO3. Technique and applications of- Column Chromatography,
		CO4. Technique and applications of- Thin layer Chromatography
		CO5. Advantages of supercritical fluid chromatography
		CO6. Difference between Nephelometry and Turbidimetry
	CH-345: Industrial Chemistry	CO1. Classification of polymerization reactions,
		CO2. Thermodynamic and transport properties of polymer,
		CO3. Commercial polymers and their importance,
		CO4.Importance of sugar industry,
		CO5.Manufacturing of ethyl alcohol by using molasses.
		CO6. Consumption (plantation white) sugar with flow diagram.
	CH-346-E Dairy Chemistry	CO1. Knowing importance of the subject from the point of rural economy.
		CO2. Knowing the composition of milk, its food & nutritive value
		CO3. Understanding the Microbiology of the milk
		CO4.Understanding various preservation and adulterants, various milk proteins and their role for the human body.
		CO5. 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
		CO2. To determine the molecular refractivity of the given liquids A, B, C and D.
		CO3. To determine the order of reaction for the oxidation of alcohol by potassium dichromate and potassium permanganate in acidic medium calorimetrically
		CO4. SimultaneousdeterminationofCu ²⁺ andNi ²⁺ ionsbycolorimetry/spectrophotometrymethod
	CH-348: Inorganic Chemistry Practicals	CO1. Estimate of Fe asFe ₂ O ₃ Gravimetrically.
		CO2. Estimate of Ba asBaSO ₄ usinghomogeneousprecipitationmethod.
		CO3. Estimate of Nickel as Ni –DMG Gravimetrically
		CO4. Analyse of sodium bicarbonate from mixture by thermal decomposition method.



T.Y.B.Sc.	CH-349: Organic Chemistry Practicals	CO1. Systematic working skill in laboratory will be imparted in student
		CO2. Learn the basic principles of green and sustainable chemistry
		CO3. Synthesis of various organic compounds through greener approach
		CO4. Functional group interconversions and structural problems using chemical reactions
	CCTP-1 Physical Chemistry-I	Semester -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
	CCTP-2 Inorganic Chemistry-I	CO4. Understand of the laws of thermodynamics and their applications CO5: know the phase diagram of single component systems and binary mixture
		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.
	CCTP-3 Organic Chemistry-I	CO6. Apply group theory to predicting concerted organic reactions.
		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.
	CBOP-1 General Chemistry-I, Theory Course	CO4. Describe synthetically the processes relevant organic-chemical reactions and be able to discuss the mechanism of these reactions.
		Elective Option-A: Introduction to Solid State of Matter
		CO1. Bonding in solids – band theory
		CO2. Electronic conductivity
		CO3. Semiconductors, photoconductivity
		CO4. 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.
	CCPP-1 CHP-107 Basic Practical Chemistry-I	CO1. Students are trained to different purification techniques in organic chemistry like recrystallization, distillation, steam distillation and extraction.
		CO2. Students are made aware of safety techniques and handling of chemicals.
		CO3. Students are made aware of carrying out different types of reactions and their workup methods.
		CO4. This practical course is designed to make student aware of green chemistry and role of green chemistry in pollution reduction.
	CCTP-4 (CHP- 210) Physical Chemistry - II	Semester - 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	CO1. Know the basic mechanism of oxidation in organic compounds.
		CO2. Acquire knowledge about the reagents which causes oxidation in various compounds
		CO3. Know the reagents that causes selective and complete reduction
		CO4.Interpret ¹ H NMR, ¹³ 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)	Elective Option-A : Material Characterization Technique
	Section-I: General Chemistry-II, Theory	CO1. Valence electron count, back bonding in organometallics, spectral characterization of organometallic compounds.
		CO2. Catalytic reaction involving organometallic compounds and mechanism of these reactions
		CO3. Types of reaction involving organometallic compounds
	Section-II: General Chemistry, Practical	Elective Option-A: Electroanalytical Techniques of Analysis
		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.
	CCPP-2 CHP-227 Basic Practical Chemistry-II	CO4. Able to explain the principles of the most important liquid and gas chromatography as well as electro-migration techniques;
		CO1. Students are trained to different purification techniques in organic chemistry like recrystallization, distillation, steam distillation and extraction.
		CO2. Students are made aware of safety techniques and handling of chemicals.
		CO3. Students are made aware of carrying out different types of reactions and their workup methods.
		CO4. This practical course is designed to make student aware of green chemistry and role of green chemistry in pollution reduction.
	CHA-390	Semester- III
		Electrochemical and Thermogravimetric Methods of chemical analysis.
		CO1. 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 analysed.
		CO 6. Solve numerical problems on electrochemistry and Thermogravimetry.
		CO7. Interpret polarogram, cyclic voltammogram, pulse polarogram, Thermogram differential thermogram and DSC thermogram.



M. Sc. - II Analytical Chemistry		CO 8. Differentiate among the various methods of electrochemistry and Thermogravimetry.
	CHA-391	Analytical Method Development and Extraction Techniques CO1. Understand various terms in analytical extraction and method Development and validation. CO2. Explain instrumentations and methodology in analytical extraction. CO3. Describe basic principles of analytical extraction method development and validation. CO4. 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 analysed. CO6. Solve numerical problems on analytical extraction and method development and validation. CO7. 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.
	CHA- 392	Advanced Chromatographic Methods of Analysis CO1. Define / understand various terms in chromatography (GC and HPLC) and mass spectroscopy. CO2. Explain instrumentations in chromatography (GC and HPLC) and mass spectroscopy. CO3. 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. CO4. Explain /Describe applications chromatography (GC and HPLC) in industry and in analytical laboratory. CO5. Apply / select particular method / instrumental parameters for analysis for sample GC / HPLC. CO6. Solve numerical problems on chromatography (GC and HPLC) and mass spectroscopy. CO7. Integrate GC and HPLC chromatogram, Mass spectrum CO8. Differentiate among the chromatography (GC and HPLC) methods of analysis.
	CHA-393A	Advanced Chromatographic Methods of Analysis 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	Basics of Instrumental Methods of Chemical Analysis CO1. 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. CO3. Explain instrumentations of colorimeter, spectrophotometer, photofluometer, 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. CO5. Design / modify and validate new analytical method for chemical analysis of particular sample. CO6. Apply / select particular method / instrumental parameters for analysis of given sample. CO7. Give mathematical treatment to analytical data and able to interpret the results accurately. CO8. Verify theoretical principle practically or apply theory to explain practical observations. CO9. To conclude the results able to take the decision regarding quality of sample.
		Semester - IV
		Advanced Analytical Spectroscopic Techniques



	CHA- 490	CO1. Define / understand various terms in atomic absorption, atomic emission, fluorescence, ESR and electron spectroscopy.
		CO2. 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.
		CO4. Select appropriate methods for sample treatment in AAS / AES, ICPAES, ICPAES-MS.
		CO5. Explain advantages of ICPAES-MS over AES spectroscopy, fluorescence spectroscopy.
		CO6. Solve numerical problems on analysis all these spectroscopic methods.
		CO7. Interpret ESR spectra, super hyperfine splitting and g value in ESR, and parameters affecting it.
		CO8. Calculate theoretical parameters from ESR data and characterize compound.
		CO9. Solve problems based on atomic absorption, atomic emission, ICPAES, ICPAES-MS, fluorescence, ESR and electron spectroscopy.
M.Sc. II Semester III	CHA- 491	Chemical Methods of Pharmaceuticals Analysis
		CO1. Define / understand various terms in pharmaceutical raw material and finished product analysis.
		CO2. Explain various pharmaceutical dosage forms and types of raw materials used.
		CO3. To describe basic principles of methods of pharmaceutical analysis according to IP.
		CO4. Explain importance particular test in pharmaceutical raw material and finished product analysis.
		CO5. Perform and explain importance of limit tests, identification tests and microbiological limit test of raw materials and finished products.
		CO6. Solve numerical problems on analysis pharmaceutical raw material and finished product analysis.
		CO7. Interpret IR spectra, HPLC chromatogram, UV-Visible spectra of pharmaceutical materials.
		CO8. To perform total analysis of pharmaceutical raw material and finished product analysis according to IP / BP / USP.
		CO9. Standardize analytical instruments according to IP / BP / USP.
	CHA-492 B)	Analytical Chemistry of agriculture, Polymer and Detergents
		CO1. Define / understand various terms in soil analysis, pesticide residue analysis, detergent analysis and polymer analysis.
		CO2. Explain / describe techniques / methods of soil analysis, pesticide residue analysis, detergent analysis and polymer analysis.
		CO3. To describe basic principles techniques / methods oil analysis, pesticide residue analysis, detergent analysis and polymer analysis.
		CO4. Explain importance of soil analysis, pesticide residue analysis, detergent analysis and polymer analysis.
		CO5. Choose suitable method / techniques to characterize quality of soli polymer and detergent.
		CO6. Describe / explain results of analysis soil, pesticide residue, detergent and polymer.
		CO7. Solve numerical problems on analysis soil, pesticide residue, detergent and polymer.
		CO8. Draw conclusion regarding soil, detergent and polymer quality from analytical results.
	CHA-493 A)	Optional Analytical Chemistry Practical
		CO1. Maintain proper record of analytical data in notebook. Observer personal safety in laboratory and able handle all chemicals, instruments, etc safely in laboratory.
		CO2. Define / understand various terms involved practical methods of quantitative analysis.
		CO3. To analyse organic and inorganic materials using appropriate chemical / instrumental methods
		CO4. Explain / describe basic principles of chemical / instrumental methods used for analysis. Able to handle particular instrument according to SOP.
		CO5. Perform analysis of sample with described procedure. Able to handle analytical instruments.
		CO6. Apply / select particular method / instrumental parameters for analysis of given sample.
		CO7. Maintain appropriate reaction conditions as described in procedures.
		CO8. To perform i) selective analysis of particular component from sample. ii) Analysis at trace level from sample.
		CO9. To conclude the results able to take the decision regarding quality of sample.



		CO10. To perform calculations and interpret the results.
		Project
		CO1. Maintain proper record of analytical data in note book for research purpose.
	CHA- 493 B)	CO2. Perform review of literature related to the topic of project work and design the problem for project work.
		CO3. Decide and describe methodology for problem to solve proposed problem in the form of project. Decide and perform application of research work.
		CO4. To design experiment for research work. Collect the resources, design small equipment, etc. for completion of research work.
		CO5. Collect experimental data (raw data) and analyse the data in the perspective of problem. Present data in graphical forms for the conclusive results.
		CO6. Use computer as a tool for result analysis, presentation and writing the project.
		CO7. To obtain concrete conclusion from the results on the basis of reported theory / research work and analytical results.
		CO8. To perform report writing, scientifically.
		CO9. To write research project / paper in scientific manner.
	CHA- 494	Applied Analytical Chemistry Practical
		CO1. Maintain proper record of analytical data in notebook. Observer personal safety in laboratory and able handle all chemicals, instruments, etc safely in laboratory.
		CO2. Define / understand various terms involved practical methods of quantitative analysis.
		CO3. To analyse organic and inorganic materials using appropriate chemical / instrumental methods
		CO4. Explain / describe basic principles of chemical / instrumental methods used for analysis. Able to handle particular instrument according to SOP.
		CO5. Perform analysis of sample with described procedure. Able to handle analytical instruments.
		CO6. Apply / select particular method / instrumental parameters for analysis of given sample.
		CO7. Maintain appropriate reaction conditions as described in procedures.
		CO8. To perform i) selective analysis of particular component from sample. ii) Analysis at trace level from sample.
		CO9. To conclude the results able to take the decision regarding quality of sample.
		CO10. To perform calculations and interpret the results.
Department of Electronics		
Program Outcomes (POs) for B.Sc. Electronics		
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		Problem solving, minor/major projects, seminars, tutorials
PO8		Developing analytical abilities to address real world problems.
PO9		To research, education, industry, and market.
PO10		To help students to build-up a progressive and successful career in Physics.
Program Specific Outcomes (PSOs) for B.Sc. Electronics		
	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
	PSO4	To research, education, industry, and market.
	PSO5	To understand few electronic systems
Class	Course	Course outcomes (COs)
F.Y. B.Sc. Semester I		
	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
	EL- 112: Electronic Devices and Circuits	CO1.To analyze performance parameters based on study of characteristics of electronic devices like diode, transistors etc. 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
	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 CO3. Analyse generation of FM Modulation and demodulation methods and comparison
	EL-232: Digital Circuit Design	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
S.Y. B.Sc. Semester III	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



S.Y. B.Sc. Semester IV	EL-242: Microcontroller and Python Programming	CO1. Identify the features and architectural details of microcontroller(arduino)
		CO2. Write code/program using open source programming language(arduino) for basic identified applications
		CO3. Understand programming basics of python programming language
		CO4. Understand special features of python programming language such as importing modules, directory, tuples
	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 MICROBIOLOGY		
Programme Outcomes (POs) B.Sc.		
PO1		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, System 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.
PO2		The discovery of microscope and the microbial world, will gain the knowledge about the contribution of scientist in Microbiology, Development of Microbiology since 19 century, Morphology and different characters of micro-organisms
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
Program Specific Outcome (PSOs) B.Sc.		
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.
Class	Course	Course outcomes (COs)
F. Y. B.Sc.	Introduction to Microbiology Paper I.	CO1. 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.
		CO2. The scope of Microbiology in the different fields with thrust on the applications of microorganisms of ancient and advanced periods.
		CO3. The characterization of various groups of microorganisms based on morphology and reproduction using Bergey manual for bacteria and viruses by ICTV.
		CO4. Detailing the cytology of microorganisms with respect to ultra structure to be used in identification.
		CO5. Analysis of the role of biological chemicals in cell by understanding the types, functions with examples.
	Basic Techniques in Microbiology Paper II	
		CO1. Awareness of bio safety, containment, asepsis and their role in microbiology laboratories.
		CO2. Knowledge of the measurements used in microbiology in terms of micrometry, units, conversions.
		CO3. Understanding the principles of basic microscopy, use of different types of microscopes, care & maintenance in handling microscopes.
		CO4. Knowledge of the stains used in study of microorganisms, staining methods, role of different stains and theories of staining.
		CO5. Learning of the methods of sterilization, disinfection, mechanisms of each agent, testing the disinfectant. efficiency
		CO6. 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.
		CO7. Study of the principles of general growth, compare the different types of growth, measurement methods with emphasis on industry.
	Practical course: Paper-III	CO1. Learning of the general instructions of safety in microbiology, discuss the need of micro-aid box.
		CO2. Skills for handling instruments of microbiology laboratory with care & maintenance, creation of SOPs.
		CO3. Skills for handling different types of microscopes and learn the design, functioning and maintenance.
		CO4. Collection of samples for identification of the microorganisms from natural habitats and characterize morphologically, staining & motility.
		CO5. Enumeration of the bacteria, fungal cells & their spores by Neubauer chamber method.
		CO6. Knowledge of aseptic transfer techniques.
		CO7. Preparation of media for cultivation of microorganisms and perform media sterilization and checking its efficiency, to study the growth characters on different media.
		CO8. Learning of the pure culture isolation methods by streak, spread, pour plate method after serial dilution of the given soil sample.
		CO9. Enrichment of the soil microorganisms using Winograd Skys column, enrichment media.
		CO10. Demonstration of the methods of disinfection and check the effect of disinfectants on skin microflora.
		CO11. Learning of the method of phenol co-efficient method.
		CO12. Assessment of the optimization of the growth conditions and to test the effect of each factor at different limits.
	(MB-211) Bacterial systematic and physiology	CO1. Study the principles of bacterial taxonomy, classification, identification based on Bergeys manual.
		CO2. Learning of the different methods used in taxonomy.
		CO3. Sketching of the different physiology in different cells with the pathways and the role of enzymes as catalysts with the principles of their action.
	(MB-212) Microbial Genetics	CO1. Understanding of the screening methods used in fermentation industry, strains used & their characters.
		CO2. Assessment of the types of cultures, media used, monitoring methods during the fermentation process,



		CO3. Skills to avoid the Risks of contamination, types of fermentations and applications of microorganisms in industry
		CO4. Study the different types of soils, formation of soil, role of microbes in soil as rhizosphere, composting, bioinoculants, microbial associations in soil.
		CO5. Skill to sketch the biogeochemical cycles with role of microorganisms.
		CO6. Knowledge of the microbial degradations of complex polymers.
		CO7. Learning of the methods of large-scale production of bioinoculants.
	(MB221) Analytical Microbiology	CO1. Knowledge of the basics principles of genetics with focus on discoveries, experiments of scientists.
		CO2. Development of skills to sketch the structure of nucleic acids with their role in cells.
		CO3. Ability to compare the structures of different forms of nucleic acids.
		CO4. Learning the principles of DNA replication, methods, models and sequence of events.
		CO5. Analysis of the DNA code, gene organization, gene expression.
		CO6. Understanding of the role of mutations, mutagens, mechanism, types of mutants, isolation methods.
		CO7. Knowledge of plasmids- types, characters, genetics, curing, role.
	(MB-222) Air and Water Microbiology	CO1. Understanding of the significance of air and water quality.
		CO2. Learning the principles of air microbiology, differentiating air droplets, aerosols, nuclei.
		CO3. Assessing the different methods of air sampling.
		CO4. Learning of the methods of air sanitation.
		CO5. Knowledge of the different types of water, composition, water standards, water potability.
		CO6. Analysis of the sampling of water and fecal indicators in Water.
		CO7. Knowledge of the water treatment methodologies.
		CO8. Ability to characterize the waste waters and treatment methods for effective disposal of waste waters.
	Practical course:	CO1. Learning of the air sampling methods by settling velocity and Simpsons diversity index and to comment on the air quality
		CO2. Identification and characterization of pathogens form air, soil and water by cultural, morphological and biochemical characterization.
		CO3. Knowledge of the water sampling methods, potability testing, D.O., BOD, TS, TSS, TDS determination.
		CO4. Skills to carry out mutagenesis, isolation & characterization of mutants by replica plate method.
		CO5. Knowledge and study the bacterial growth curve and plotting the graphs using software.
		CO6. Visit to a fermentation industry/water treatment plant and report generation.
T. Y. B.Sc.	MB331 Medical Microbiology I ,	CO1.Study about Introduction to infectious diseases of human body systems
	MB341 Medical Microbiology II	CO2.Epidemiology.
		CO3.To Study of groups of bacterial Pathogens.
		CO4.Understand Chemotherapy.
		CO5. Study about Introduction to cultivation of viruses, Study groups of viral Pathogens.
		CO6.To Study groups of parasites
		CO7.To Study groups of <i>Candida and Non - Candida</i> .
	MB-332 Genetics and Molecular Biology. I	CO1 Study of Gene Linkage and crossing over.
	MB- 342 Genetics and Molecular Biology. II	CO2. DNA Replication. Prokaryotic and Eukaryotic Translation. Prokaryotic and Eukaryotic Translation.
		CO3. To understand Guidelines for gene manipulation
		CO4. Study the Technique used in recombinant DNA technology. Gene transfer by transformation. Gene transfer by transduction.
		CO5. Gene transfer by conjugation. DNA damage and repair.
		CO6. Recombination and Mutants in Bacteriophages.
		CO7. To Understand tools of Recombinant DNA technology.
		CO8. Generation of Recombinant DNA molecule.
	MB-333 Enzymology.	CO1. To study Enzymes, Structure of Enzymes, Role of cofactors in metabolism
		CO2. Enzyme assays.
		CO3. Understand Principles and Methods of Enzyme purification.



		CO4. To study Enzyme Kinetics.
		CO 5. Metabolic Regulations
		CO 6. Immobilization of enzymes.
	MB-343 Metabolism	CO1. To study Membrane transport mechanisms.
		CO2. Bioenergetics.
		CO3. Biosynthesis and Degradation.
		CO4. Bacterial Photosynthesis.
	MB - 334 Immunology I	CO1. Study About Immunity.
	MB-344 Immunology II	CO2. Formation of blood cell.
		CO3. Organs of immune system.
		CO4. Innate immunity Nonspecific mechanism of defense
		CO5. Antigen.
		CO6. Immunoglobulins
		CO7. Adaptive / Acquired Immunity.
		CO8. To understand Transplantation and Immunity.
		CO9. Major Histocompatibility complex.
		CO10. Cytokines
		CO11. Antigen-Antibody Interactions
		CO12. Immunohematology
		CO13. Public health immunology.
		CO14. Hypersensitivity
		CO15. To study Hybridoma Technology and Monoclonal Antibodies.
	MB-335 Fermentation Technology I	CO1. Study the Strain Improvement.
	MB - 345 Fermentation Technology II	CO2. Media Optimization.
		CO3. Sterilization Of media
		CO4. Scale up and Scale down
		CO5. To understand Principles and Methods of downstream Processing.
		CO6. Study about Quality assurance of fermentation Product.
		CO7. To Understand Fermentation Economics.
		CO8. 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.) Milk Products g) vaccines h) Immune sera
	MB -336 Food and dairy Microbiology	CO1. To understand Dairy Development in India.
		CO2. Milk Chemistry and constituent 3 Microbiology of Milk
		CO3. To study technics Preservation of Milk by Pasteurization & its storage
		CO4. Microbial analysis of milk
		CO5. 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
		CO7. Study about Food preservation
		CO8. Microbial food poisoning and food infection
		CO9. Fermented foods:
		CO10. Applications of genetically modified microorganisms
		CO11. Food Sanitation and regulation
	MB-346: Soil And agricultural	CO1. Study about Agriculture Technology
	Microbiology	CO2. A Plant growth improvement b Methods of plant disease control
		CO3. To understand about Biochemistry and production of bio-fertilizers



		CO4. Study about Bioremediation and Waste Water Treatment
		CO5. Bioleaching:
		CO6. Introduction to Nanobiotechnology
		CO7. Microbial Biosensors and Biochips in Environmental Monitoring
		CO1.Screening and isolation of pesticide degrading microorganisms from soil.
		CO2.Isolation and identification of lactic cultures up to genus level
		CO3.Laboratory scale fermentation, estimation, product recovery and yield calculation of ethanol / organic acid (any one)
		CO4. Quality assurance tests:
		a. Antibiotic and growth factor assay (agar gel diffusion technique)
		b. Sterility testing of non-biocidal injectables
		CO5. MIC and MBC of Antibacterial compounds
		CO6 Tests for Milk and Dairy products
		CO7. Enrichment, Isolation, Preparation and Application of Bioinoculants
		CO8. Isolation and identification of <i>Xanthomonas</i> spp. from infected sample
		CO9.Isolation and identification of <i>Aspergillus</i> spp. from onions infected with Black Mould
		CO10. Antifungal activity of Lactic acid bacteria.
		CO11. Microscopic examination of Fungi causing Rust and Smut infections in Plants (Demonstration
		CO12. Dye removal from wastes by dead microbial Biomass
		CO13. Biosynthesis of nanoparticles
	Mb – 347: Practical Course – i Applied Microbiology	
	Mb – 348: Practical course – ii	CO1. Determination of absorption spectra and molar extinction co-efficient
	Biochemistry and genetics	CO2. Clinical Biochemistry - Estimations of:
		a. blood sugar
		b. blood urea
		c. serum cholesterol
		d. serum proteins and albumin
		CO3.Qualitative analytical tests for proteins and carbohydrates
		CO4.Preparation of buffers
		CO5.Paper chromatography
		CO6.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
		CO7. 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
		CO8.Isolation and enumeration of bacteriophages and study of phage morphology
		CO9. Genomic (bacterial) DNA isolation and detection
		CO10. Isolation of plasmid DNA and gel electrophoresis (demonstration)
		CO11. Transformation of <i>E. coli</i> and selection of recombinants
	MB - 349 : Practical Course -III	CO1. Clinical Microbiology
	Diagnostic Microbiology & Immunology	CO2. Isolation & Identification of Pathogen from clinical sample
		CO3. Hematological test
		CO4. Agglutination test
		CO5. Immune precipitation



Department of Zoology		
Program Outcomes (COs) for B.Sc. Zoology		
		Program Outcomes (POs) for B.Sc. Science faculty
PO1		Demonstrate and apply the fundamental knowledge of the basic principles of major
PO2		Apply knowledge to solve the issues related to animal sciences
PO3		Take appropriate steps towards conservation of endemic and endangered animal species
PO4		To foster curiosity in the students for Zoology
PO5		To create awareness amongst students for the basic and applied areas of Zoology
PO6		To orient students about the importance of abiotic and biotic factors of environment and their
PO7		To provide an insight to the aspects of animal diversity.
PO8		Fundamental knowledge of the basic principles of major
PO9		Abiotic and biotic factors of environment and their conservation
PO10		To inculcate good laboratory practices in students and to train them about proper handling of lab
Program Specific Outcomes (PSOs) for B.Sc. Science faculty		
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.
Program 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, analysis
PO10		Modern tool usage: Create, select, and apply appropriate techniques, resources, and ICT tools for understanding of the subject.
Program 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.
PSO5		Abilities to apply scientific methods, collection of scientific data, problem solving.



Course Outcomes (COs)		
Class	Course	Course Outcomes
F. Y. B.Sc. (semester pattern)	Animal Diversity I (ZO 111)	CO1The student will be able to understand classify and identify the diversity of animals.
Semester 1		CO2 The student understands the importance of classification of animals and classifies them effectively using the six levels of classification.
		CO3The 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)	CO1The 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.
		CO2To understand anticipate, analyse and evaluate natural resource issues and act on a lifestyle that conserves nature
		CO3The 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)	CO1The student will be able to understand classify and identify the diversity of animals.
		CO2The student understands the importance of classification of animals and
		CO3The 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)	CO1To 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.
		CO2Study of the scope of Cell Biology.
		CO3 Study of cell structure and cell functions.
		CO4 Study of broad description of bio-chemistry of cell, structure & functions of cell organelles.
		CO5 Study of cell biology with its concern aspects scientifically.
		CO6 Study of the cellular activities.
		CO7 Study of significance of cell & its molecular activities.
		CO8 Study of cancer cell & cancer-causing agents.
	Zoology Practical Paper (ZO123)	CO1The 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.	ZY-221: ANIMAL SYSTEMATICS AND DIVERSITY – IV	CO1. Study of invertebrate phyla like Arthropoda, Mollusca & Echinodermata
Semester-I		CO2. Study of Arthropoda, Mollusca Echinodermata with reference to their specific characteristics like mimicry
		larval forms, shell and foot modification and pedicellariae.
		CO3. Detailed study of morphology and physiology of various system of Asterius.
	ZY- 212 Applied Zoology	CO1. Study of different types of fisheries and ponds.
	(Fisheries & Agricultural Pests and their Control) Paper II	CO2. Study of culture of freshwater fishes like Rohu, Catla, Mrigal and Prawn.
		CO3. Study of harvesting methods of some marine forms like Harped on, Mackerel, lobster, Pearl oyster.
		CO4. Study of fishery byproducts and different fish preservation techniques.



		CO5. Study the Introduction to Pests and Various types of Pests.
		CO6. Study the Insect pests of Agricultural Importance. (Marks of Identification, Life cycle, Nature of damage, and Control measures.)
		CO7. Study of Non-insect Pests.
		CO8. Study of the pest control practices in brief.
		CO9. Study of the plant protection appliances.
		CO10. Study of pesticides.
	(ZY 221) Animal Systematics and	CO1. Study of invertebrate phyla like Arthropoda, Mollusca & Echinodermata
	Diversity V (Paper-I)	CO2. Study of Arthropoda, Mollusca Echinodermata with reference to their specific characteristics like mimicry, larval forms, shell and foot modification and pedicellariae.
		CO3. Detailed study of morphology and physiology of various system of Asterius.
	(ZY 222) Applied Zoology II	CO1 Study the concept of Apiculture and nesting behavior of A. dorsata, A. florae, A. indica and A. mellifera.
	(Apiculture & Sericulture)	CO2. Study of bee keeping equipment.
		CO3. Study of bee keeping and seasonal management.
		CO4. Study of different types of bee products.
		CO5. Study of bee diseases and enemies.
		CO6. Study the concept of Sericulture and different types of silk moth like Mulberry, Tassar, Eri and Muga silkworms in India.
		CO7. Study of morphology and life cycle of Bombyx Mori.
		CO8. Study of cultivation and harvesting of mulberry plant.
		CO9. Study of silkworm rearing and postharvest processing
	Paper III- ZY-223: Practical course	CO1. Study of different types of fisheries and ponds.
		CO2. Study of culture of freshwater fishes like Rohu, Catla, Mrigal and Prawn.
		CO3. Study of bee keeping and seasonal management.
		CO4. Study of different types of bee products.
Semester III	(ZY 331) Animal Systematics and Diversity V (Paper I)	CO1. Study of the morphology and physiology of Pilaglobosa and Calotesversicolor.
		CO2. Description, locomotion and nutrition of Phylum – Protozoa.
		CO3. Description of the phylum Coelenterata and its polymorphism
		CO4. Description of Canal System of phylum- Porifera.
		CO5. Description of Phylum Nematoda and give examples of pathogenic Nematodes
		CO6. Identification and study of the characters of class - Dipnoi with its example.
		CO7. Comparative studies of Heart, Kidney, Brain and Arterial System in different vertebrates.
		CO8. Study of the Dentition in mammals.
		CO9. Description of the Accessory Respiratory organs in fishes.
	(ZY 332) Mammalian Histology	CO1. Study of the epithelial, connective, nervous and muscular tissue.
	(Paper-II)	CO2. 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 & Toxicology (Paper IV)	CO1 Understanding of Basic concepts of Environmental science & its Scope.
		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 Plasmodium vivax, Entamoebahistolitica, Ascaris lumbricoides and Taenia Solium.
		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 (Paper I)	CO 1. Study of preparation of different solutions/ strength of chemicals in percentage, normality, ppm, ppb etc.
		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 and Endocrinology (Paper II)	CO 1. Study of concept of nutrition and study of physiology of digestion related to digestive enzymes.
		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, goiter, Myxedema etc.
	(ZY 343) Genetics & Molecular Biology (Paper III)	CO 1. Study of Genetics & its study at molecular level.
		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)	CO1. Description, locomotion and nutrition of different phylum.
		CO2. Histological studies of the organs like- skin, tooth, tongue, alimentary canal and digestive gland, respiratory
		CO3. Study of separation techniques like chromatography, electrophoresis, ultracentrifugation,
		CO4. Study of circulation in relation to cardiac cycle, blood pressure and advanced techniques like
	ZY- 348 Practical Paper 2 (Semester III & IV)	CO1. Study the practical of biochemistry with classification and Significance.
		CO2. Study of concept of nutrition and study of physiology of digestion related to digestive enzymes.
	ZY- 349 Practical Paper 3 (Semester III & IV)	CO1. Study the Scope and Theories of general embryology.
		CO2. Study of veterinary entomology.
M.Sc. Course Outcomes (COs)		
Class	Course	Course Outcomes
M.Sc.I Zoology		
Semester-I	(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, Sorenson's 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.
	(ZOUT 102) Cell Biology and Developmental Biology	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.
		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.
		CO5 Detail Study of population genetics.
		CO6 Study of common error in written and spoken presentation.
		CO7 Study the hypothesis, theory and concept and genetic code as a simple language.
		CO8 Study of outline of a science paper and project preparation, funding.
		CO9 Study the writing of Introduction, Materials and Methods, Observations and Results and Discussion.
	(ZODT 114) Freshwater Zoology	CO1. Study of types of aquatic environment.
		CO2. Study of physical and chemical properties of water.
		CO3. Study of Physiological and protective adaptations of protozoa, rotifer, crustaceans, fishes.
		CO4.Study of Diagnostic features and life cycle of temporary rainwater pool animals: Fairy shrimps and Tadpole shrimps.
		CO5.Study of Respiratory and Locomotory adaptations in freshwater insects and their larvae.
		CO6.Study of Amphibia and water.
		CO7.Study of Adaptations in Freshwater reptiles.
		CO8.Study of Economic importance of freshwater mollusks.
		CO9.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.
	(ZOUP 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
	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	
	Endocrinology and Parasitology	CO1Discuss 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.
		CO4Explain the role of hormones in moulting, change in body colour of crustaceans; yolk 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.	CO2Explain the mechanism of chemical communication in vertebrates.
		CO3Explain 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 pancreateomy.
		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.
	(ZY 301) Animal Physiology I	CO 1 Study of Bioluminescence and animal electricity and concept of buoyancy.
		CO 2 Study of External and Internal Environment in Animal body.
		CO 3 Study of membrane physiology of animal.
		CO 4 Study of energy metabolism in animal.
		CO 5 Study of excretion, osmoregulation.
	(ZY 302) Immunology	CO 1 Detail Study of Immune system of human.
		CO 2 Study of humoral immunity, immediate response to infection in human.
		CO 3 Detail study of antibody structure and theories of antibody synthesis.
		CO 4 Study of antigen – antibody reaction and complement fixation pathway.
		CO 5 Detail study of immunogenetics.
		CO 6 Study of different immunological techniques.
	(ZY 304) Insect Physiology and Biochemistry	CO 1. Study of Integument of insect.
		CO 2. Study of Digestion and absorption of proteins, Carbohydrates and lipids in insect.
		CO 3. Study of Fat body of insect.
		CO 4. Study of ventilatory mechanism and their control in insect.
		CO 5. Study of Hemolymph of insect.
		CO 6. Study of Muscle in insect.
		CO 7. Study of Excretion and water balance in insect.
		CO 8. Study of microsomal and extra microsomal enzymes insecticide degradation and detoxification in . insect body
		CO 9. Study of Endocrine, neuroendocrine hormones, chemistry, function and physiology, other peptide and steroid hormones in insect.
	(ZY 305) Research Methodology	CO 1 Study of concept of research methodology.
		CO 2 Study of quantitative methods use in research.
		CO 3 Study of computer application in research work.
		CO 4 Study of different tools and techniques use in research projects.
	(ZY 307) Fundamentals of Systematic	CO 1 Detail study of systematics and living organism classification system.
		CO 2 Study of kingdoms of life.
		CO 3 Study of different methodology in systematic.
		CO 4 Study of taxonomical key, taxonomic procedure and molecular phylogeny.
	(ZY 308) Insect Ecology	CO 1. Detail study of insect ecology.
		CO 2. Study of insect and climate, herbivores insects.
		CO 3. Study of natural enemies of insect and insect population dynamics.
	ZY 308 P Research Project	CO 1. learn the project on different topic
		CO 2. Learn the methodology in research

Semester III



	ZY 301 P Practicals in corresponding Course	CO 1. Estimation serum uric acid
		CO2. Body size and oxygen consumption in aquatic animals
Semester IV	ZY 302 - 309 Practicals in Corresponding course	CO1. Plankton identification and quantification from river / lake water samples.
		CO2. Water analysis for physico-chemical characteristics.
		CO3. Physico chemical analysis of soil.
	(ZY 401) Animal Physiology II	CO1 Detail study of concept of nutrition, digestion, respiration in animal.
		CO2 Study of Blood and blood vessels of animal.
		CO3 Detail study of cardiac physiology.
		CO4 Study of neuronal physiology in animal.
		CO5 Study of Animal muscle physiology.
		CO6 Study of sensory physiology in animal.
	(ZY 402) Economic Zoology	CO1. Study of Parasitic protozoans and their role in human welfare, soil protozoans and their role in agriculture.
		CO2. Study of Sponge culture and its importance in industry.
		CO3. Study of Concept of Coral reefs and its significance.
		CO4. Study of Helminthes as human and animal parasites.
		CO5. Study of Nematodes- parasitic roundworms of animals and plants.
		CO6. Study of Vermiculture industry in India.
		CO7. Study of house hold insects, Apiculture, Lac culture, Sericulture, Prawn culture, Insects of commercial value and stored grain pests.
		CO8. Study of Economic importance of amphibian, reptiles, and birds.
		CO9. Study of Poultry, Piggery, Dairy industry and wool industry.
		CO10. Study of Model animals in Pharmaceutical industry.
	(ZY 403) Mammalian reproductive physiology	CO1 Study the Reproductive organ: male and female gonads, duct systems and sex accessories, external sexual dimorphisms.
		CO2 Study of Sexual cycles: puberty, estrous and menstrual cycles.
		CO3 Study of Hormonal regulation in Human body.
		CO4 Study the conception and blastocyst formation, implantation and delayed implantation, placenta: formation, types and functions, hormones in pregnancy.
		CO5 Study of birth process and its neuroendocrine control and Lactation.
		CO6 Study of artificial control of reproduction.
	(ZY 404) Histology and Histochemistry	CO1. Study of the epithelial, connective, nervous and muscular tissue.
		CO2. Histological studies of the organs like- skin, tooth, tongue, alimentary canal and digestive gland, Respiratory organs, blood vessels, kidney and reproductive organs.
		CO3. Detail study of detection of glycogen, neutral acid, mucopolysaccharides, detection of basic proteins, and detection of specific and nonspecific lipids.
		CO4. Detail study about tools in histology
	(ZY 406) Apiculture	CO1 Study the concept of Apiculture and nesting behavior of A. dorsata, A. florae, A. indica and A. mellifera.
		CO2. Study of bee keeping equipment.
		CO3. Study of bee keeping and seasonal management.
		CO4. Study of different types of bee products.
		CO5. Study of bee diseases and enemies.



Semester IV	(ZY 407) Pest Control	CO 1. Study of Introduction of the pest control, types of pests and their importance, Damage caused by pests.
		CO 2. Study of Brief outline of medical and veterinary entomology with reference to important measures to control
		the vectors. House hold and stored grain pest and their control measures.
		CO 3. Study of Principles and methods of pest control.
		CO 4. Study of Autocidalcontrol, Chemosterilents, Knipplings model, Pheromonal and hormonal control and Concept of Integrated pest management.
		CO 5. Study of non-insect pest and their control: Rat, Bandicoots, Crabs, Snails, Slugs, Birds and Squirrels.
		CO 6. Study of Pesticide- Appliances: Sprayers and Dusters, Hazards of Pesticides and Antidotes.
	ZY406 P Practical Apiculture	CO 1. Types of Honey bee
		CO 2. Cast in honey bee
	ZY308 P Research Project	CO 1. learn the project on different topic
		CO 2. Learn the methodology in research
Programme Outcomes (POs), Programme Specific Outcomes (PSOs) & Course Outcomes (COs) for COMMERCE FACULTY		
Programme Outcomes (POs) Of B. Com		
PO1		A career options after B. Com 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	Understanding and Knowledge:	That hire B. Com graduates in positions like Insurance Agents.
PSO2	Skilled communicator	The jobs for B. Com graduate found to be great in Business management.
PSO3	Practical skills	B. Com Aspirants eligible for both programmes separately can pursue a CA with B.Com.
PSO4	Scientific knowledge skill	While pursuing B. Com degree, we can do digital marketing course so that we can get opportunities for suitable jobs.
PSO5	Problem Analysis	You can do ADCA (Advance diploma in computer application) is best course with B. COM
Programme Outcomes (POs) of M.Com.		
PO1		Able to acquire basic and fundamental knowledge and skills for doing business and commercial activities of their choice.
PO2		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.
Programme Specific Outcomes (PSOs) of M.Com.		
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.
Class	Course	Course outcomes
F.Y.B. Com	Financial Accounting- I	CO1 To impart knowledge of basic accounting concepts
Semester		CO2 To create awareness about application of these concepts in business world
		CO3 To impart skills regarding Computerized Accounting
		CO4 To impart knowledge regarding finalization of accounts of various establishments.
	Marketing and Salesmanship- I	CO1 To introduce the basic concepts in Marketing.
		CO2 To give the insight of the basic knowledge of Market Segmentation and Marketing Mix
		CO3 To impart knowledge on Product and Price Mix.
		CO4 To establish link between commerce, business and marketing
		CO5 To understand the segmentation of markets and Marketing Mix.
		CO6 To enable students to apply this knowledge in practicality by enhancing their skills in the field of Marketing.
	Business Mathematics & Statistics- I	CO1 To introduce the basic concepts in Finance and Business Mathematics and Statistics
		CO2 To familiar the students with applications of Statistics and Mathematics in Business
		CO3 To acquaint students with some basic concepts in Statistics.
		CO4 To learn some elementary statistical methods for analysis of data.
		CO5 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	CO1 To introduce the students to the emerging changes in the modern office environment
		CO2 To develop the conceptual, analytical, technical and managerial skills of students efficient office organization and records management
		CO3 To develop the organizational skills of students
		CO4 To develop employability skills among the students
	Financial Accounting- II	CO1 To impart knowledge of various software used in accounting
		CO2. To impart knowledge about final accounts of charitable trusts
		CO3 To impart knowledge about valuation of intangible assets
		CO4 To impart knowledge about accounting for leases
	Business Mathematics and Statistics - II	CO1 introduce the basic concepts in Finance and Business Mathematics and Statistics



		CO2To familiar the students with applications of Statistics and Mathematics in Business
		CO3To acquaint students with some basic concepts in Statistics.
		CO4To learn some elementary statistical methods for analysis of data
	Organizational Skill Development- II	CO1To imbibe among the students the qualities of a good manager and develop the necessary skill set
		CO2. To develop the technical skills of the students to keep up with the technological advancements and Digitalization.
		CO3.To 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.
S.Y.B.Com. (Annual)	Business Communication -201	CO1.Understanding of the concept, process and importance of communication.
		CO2.Provision of knowledge of various media of communication.
		CO3. Development of business communication skills through the application and exercises
	Corporate Accounting (202)	CO1.Awareness about the conceptual aspect of corporate accounting
		CO2.Enabling the students to develop skills for Computerized Accounting
	Business Management (204)	CO1.Provision of knowledge & understanding about business management concept.
	Elements of Company Law (205)	CO1.Imparting the students with the knowledge of fundamentals of Company Law.
		CO2. Knowledge of new concepts involving in company law regime.
		CO3.Awareness to students with the duties and responsibilities of Key Managerial Personnel.
		CO4. Imparting students the provisions and procedures under company law.
	Marketing Management –(I) (-206-h)	CO1. Orientation of the students with recent trends in marketing management
		CO2.Awareness about marketing of ecofriendly products in the society through students
		CO3. Knowledge and the use of E-Commerce in competitive environment
		CO4.Understanding the influences of marketing management on
	Business Economics	CO1 Understood micro economics
		CO2 Understood the concept of national income.
		CO3 understood the concept of money and banking.
T.Y.B.com	Auditing (Sem-1)	CO1 Understand the concept of auditing
		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.
M.Com-I(Sem-II)	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.
M.Com-I	Income tax	CO1 To know the computation of income under salaries.
		CO2 To know the computation of business and profession.
		CO3 To study and understand computation of taxable income.
M.Com-I	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	CO1 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.
		CO2 To 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 (POs) Of BBA 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 Specific Outcomes (PSOs) of BBACA		
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.
Class	Course	Course outcomes (COs)
	CA-101: Business Communication	CO1. Student understand importance of communication in business.
BBA(CA)	Paper I	
	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	CO1.Students can solve problem by analyzing and converting logical thinking to computer understandable format using C Programming.
	Paper III	CO2. Student learns the basic terminologies of C language.
		CO3. Students will be able to design their own program 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 programs 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.
		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 Paper II (202)	CO1. Maintenance, proper handling, creation, firing queries to the database with mapping cardinalities Cartesian product. 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 programs 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) Relational Database Management System (301) Paper I	CO1. Students can solve problem by analyzing and converting logical thinking to computer understandable format using C Programming.
	Data Structure using 'C' (302) Paper II	CO1. Understanding about how to use database as backend in software Development
		CO1. Developing, Organizing and Storing the data, Data Analysts
	Introduction to Operating System (303) Paper III	CO1. Knowledge of operating system concepts. CO2. Skill to operate the different operating systems. CO3. Study of management of all resources in the O.S.
	Business Mathematics (304) Paper IV	CO1. Usage of Mathematical concepts in Computers
	Software Engineering (305) Paper V	CO1. Knowledge of Software tools, methods, types, phases, quality metrics Designing, Maintaining, Implementing, testing Software Products
	Lab Course-Practical (306) Paper VI	CO1. Developing Desktop Application software 's, Logical and Analytical Skills,
	Object Oriented Programming Using C++ (401) Paper I	CO1. Developing System Software 's
	Programming Using Visual Basic (402) Paper II	CO1. Understanding about how to use VB as frontend in software Development



Semester IV	Computer Networking (403) Paper III	CO1. Awareness about Computer. User understands how to access remote programs and remote databases either of the same organization or from other enterprises or public sources.
	Enterprise Resource Planning (404) Paper IV	CO1. Knowledge of ERP.
	Human Resource Management (405) Paper V	CO1. Development and implementation of employee training, development programme and understanding process of recruitment, selection.
	Lab Course-Practical (406) Paper VI	CO1. Development of Desktop Application software 's, Logical and Analytical Problem-Solving Skills
	Java Programming (501) Paper I	CO1. Development System Software 's
Semester V	Web Technology (502) Paper II	CO1. Knowledge of the Programming in JavaScript, VBScript and html syntaxes, methods for web application development
	Dot NET Programming (503) Paper III	CO1. It is helpful to students that how to develop Desktop Application.
	Object Oriented Software Engineering (504) Paper IV	CO1. Designing, Maintaining, Implementing, Testing Software Products
	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
	Advanced Web Technology (601) Paper I	CO1. Developing Web Applications
	Advanced Java (602) Paper II	CO1. Design & Developing Web Application software.
	Recent Trends in IT (603) Paper III	CO1. Understanding of current trends in Software industries and corporate sectors.
Semester VI	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 softwares, Logical and Analytical Skills, Problem Solving Skills.

Department of Economics

Program Outcomes (POs) for B.Com. Economics

PO1	To relate and recognize the concept and indicators of Economic Development.
PO2	To describe and analyze the concept and indicators of Human Development.
PO3	To explain the characteristics of Developing and Developed Countries.
PO4	To describe the constraints to the process of Economic Development.
PO5	To describe and explain the process of Economic Planning.
PO6	To describe and examine the changing structure of planning process in India.
PO7	To describe and explain the relation between Economic Development and Environment.
PO8	To provide the students with the background of the Indian Economy with focus on contemporary issues like economic environment.
PO9	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.
PO10	Ability to develop awareness on the various new developments in the different sectors of an economy – agriculture, industry, services, banking, etc.

Program Specific Outcomes (PSOs) for B.Com. Economics

PSO1	Ability to develop an understanding of the economic environment and the factors affecting economic environment.
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PSO2		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.
PSO3		To help the students to prepare for varied competitive examinations
PSO4		Making students financially literate
PSO5		Students understand the financial environment of the family
Class	Course	Course outcomes (COs)
F.Y.B. Com	Subject: -Business Economics (Micro) SEM-I&II	CO1. To impart knowledge of business economics
		CO2. To clarify micro economic concepts
	Subject: - BANKING & FINANCE SEM-I&II	CO3. To analyze and interpret charts and graphs
		CO4. To understand basic theories, concepts of micro economics and their application
S.Y.B. Com	Subject: Banking and Finance-I (Indian Banking System -I) SEM-III&IV Course Code: 236(B)	CO1. To provide knowledge of fundamentals of Banking
		CO2 To create awareness about various banking concepts
	Subject: Banking and Finance-I (Indian Banking System -I) SEM-III&IV Course Code: 236(B)	CO3 To conceptualize banking operations.
		CO4. To understand macroeconomic concepts
T.Y.B. Com	Subject Name -: Indian & Global Economic	CO5. To introduce the various concepts of National Income
		CO1. To familiarize the students to the basic theories and concepts of Macro Economics and their application.
	Development SEM-V&VI Course Code -: 352 (A)	CO2. To study the relationship amongst broad aggregates.
		CO3. To impart knowledge of business economics.
T.Y.B. Com	Subject Name -: Banking & Finance Special Paper II SEM-V&VI Course Code -:364(B)	CO4. To understand macroeconomic concepts
		CO5. To introduce the various concepts of National Income
	Subject Name - Banking Law and Practices in India. SEM-V&VI	CO1.To provide the knowledge about Indian Banking System.
		CO2.To create the awareness about the role of banking in economic development.
T.Y.B. Com	Subject Name -: Indian & Global Economic	CO3. To provide the knowledge about working of Central Banking in India
		CO4. To know the functioning of private and public sector banking in India.
	Development SEM-V&VI Course Code -: 352 (A)	CO1 Students will be able to understand present Economic Scenario of Indian Economy as well as World Economy.
		CO2 Students will be able to understand the various aspects of development in Agricultural, Industrial and service sector in India
T.Y.B. Com	Subject Name -: Banking & Finance Special Paper II SEM-V&VI Course Code -:364(B)	CO3 Student will be able to critically evaluate the role of India in international economy.
		CO4 Students will be able to evaluate the working of international financial organization and institutions
	Subject Name - Banking Law and Practices in India. SEM-V&VI	CO1 To acquaint the students with Financial Markets and its various segments.
		CO2 To give the students and understanding of the operations and developments in financial markets in India.
T.Y.B. Com	Subject Name -: Indian & Global Economic	CO3. To enable them to gain an insight into the functioning and role of financial institutions in the Indian
		CO1 To familiarize the Banking Laws and Practice in correlation to the Banking System in India.
	Development SEM-V&VI Course Code -: 352 (A)	CO2 To understand the legal aspects of Banking transactions and its implication as a Banker and as a customer.
		CO3. To familiarize the students with the Banking Laws and Practices in India
T.Y.B. Com	Subject Name -: Indian & Global Economic	CO4. To make students capable of understanding and applying the legal and practical aspects of banking to help them technically sound in banking parlance.




PRINCIPAL
ARTS SCIENCE AND
COMMERCE COLLEGE
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